SOUTH AUSTRALIA

ANNUAL REPORT

OF THE

Department of Public Health

AND THE

Central Board of Health

FOR THE

Year ended 31st December, 1966

BY AUTHORITY: W. L. HAWES, Government Printer, Adelaide

1968

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THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Albert James Shard, M.L.C.)

SIR—We have the honour to submit the report for the Department of Public Health and the Central Board of Health for the year ended 31st December, 1966.

The report is divided into the following sections:—

1. Staff and administration.
2. Public Health Branch.
3. School Health Branch.
4. Poliomyelitis Branch.
5. Tuberculosis Branch.
6. Summary and comments.

Sections 2, 3, 4 and 5 deal with the activities of branches of the Department and have been prepared by the respective officers in charge.

1. STAFF AND ADMINISTRATION

Personnel of the Board.—During the year the members of the Board were:—

Chairman—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., F.R.A.C.P.

Members appointed by the Governor—

Sir John Cleland, C.B.E., M.D., Ch.M., F.R.A.C.P.
George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

Member elected by the metropolitan local boards—

Charles John Henry Williamson, J.P.

Member elected by other local boards—

Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S.

Secretary—

Robert William Laver, A.U.A.

Staff of the Department.—As at 31st December, 1966, the principal staff consisted of the Director-General of Public Health (Dr. P. S. Woodruff), the Principal Medical Officer (Public Health) (Dr. G. H. McQueen), the Principal Medical Officer for Schools (Dr. C. O. Fuller), the Principal Medical Officer (Poliomyelitis) (Dr. B. H. Jeanes), the Director of Tuberculosis (Dr. T. G. Paxon), and the Secretary (Mr. R. W. Laver). Throughout the year there was an average of 205 officers and employees.

Dr. G. H. McQueen was appointed Acting Director General of Public Health during the absence of Dr. Woodruff on sick leave for several months during the latter part of the year.

"*Good Health*".—Issue No. 128 of *Good Health* in 1966 was devoted to the republishing of the Directory of Social Agencies. This was the third edition of this publication which has been prepared jointly by the South Australian Council of Social Service and the Department of Public Health. This booklet has been of considerable value to persons and organizations working in the field of social welfare.

The National Health and Medical Research Council and Committees.—The 61st session at Canberra in February, 1966 and the 62nd session at Adelaide in May, 1966 were both attended by Dr. P. S. Woodruff as State representative on the Council and the Public Health Advisory Committee. Due to a prolonged absence on sick leave, Dr. Woodruff was unable to attend the 63rd session held at Canberra in October, 1966 and Dr. G. H. McQueen attended in his stead.

Dr. G. H. McQueen, Principal Medical Officer (Public Health), and Dr. K. J. Wilson, Medical Officer, Occupational Health, attended meetings of the Occupational Health Committee and Radiation Technical Sub-Committee, and Mr. R. C. McCarthy, Pharmaceutical Inspector, attended meetings of the Food Standards Committee and Poison Schedules Sub-Committee.

Maternal Mortality Committee.—This Committee met once during 1966 and considered four maternal deaths.

Clean Air Committee.—The detailed work of analysing existing interstate and overseas legislation to assist in the preparation of appropriate Regulations relating to clean air was in the hands of a sub-committee appointed from the Clean Air Committee. A considerable amount of work has been done in this direction and it is anticipated that draft regulations will be considered and finalized by the Committee during 1967. Much of the detailed analysis was done by Mr. W. E. Lilburn, who was appointed as Fuel and Chemical Engineer early in the year.

Bread Committee.—The Committee, set up by the Honourable the Minister of Health in 1965 to consider ways of improving the control of bread in South Australia, met on seven occasions during 1966. In addition to the formulation of proposed legislation, topics considered included sugar content in Vienna bread, legislation on dry matter in bread, return of unsold bread to manufacturers, and licensing of places where bread is sold.

In September, 1966, draft legislation on bread, incorporating all aspects of the bread industry in this State, was submitted to the Honourable the Minister of Health.

Pre-School Medical Examinations.—In association with the Mothers and Babies' Health Association, the Australian Medical Association and the Australian College of General Practitioners, arrangements have been made in two country areas and one suburban area to institute a system of medical examination by private medical practitioners of children whose mothers attend a Mothers and Babies' Health Association Centre. These examinations aim at early detection of abnormal conditions to permit both early treatment and planning of community services. The results will also form the basis of future school health records.

The value of early medical examination of all infants was pointed out in a report submitted in 1963 to the Honourable the Minister of Health by the Advisory Council on Health and Medical Services.

2. PUBLIC HEALTH BRANCH

PRINCIPAL MEDICAL OFFICER—Dr. G. H. McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

The Public Health Branch report consists of the following sections:—

(*a*) Staff;
(*b*) Legislation;
(*c*) Vital Statistics;
(*d*) Control of Infectious Diseases;
(*e*) Report of the Medical Officer supervising Control of Gonorrhoea and Syphilis;
(*f*) Supervision of Environmental Health;
(*g*) Supervision of Food and Drugs;
(*h*) Supervision of Occupational Health and Control of Air Pollution;
(*i*) Report of the Medical Officer for Gaols and Prisons;
(*j*) Health Education;
(*k*) Medical Examinations.

(*a*) STAFF

The professional and sub-professional staff of the Public Health Branch at the end of 1966 consisted of:—

The Principal Medical Officer.
Medical Officer (Occupational Health).
Two District Medical Officers.
Two part-time District Medical Officers.
Medical Officer for Gaols and Prisons.
Fuel and Chemical Engineer.
Two Scientific Officers.
Two Pharmaceutical Inspectors.
Chief Inspector.
Assistant Chief Inspector.
Three Senior Inspectors.
Four Resident District Inspectors.
Twentyfour Inspectors.
Two Inspector's Assistants.
Thirteen part-time Inspectors.
One Public Health Nurse.
One part-time Nurse.
One Drafting Assistant.

Again there was an upward trend in demand for departmental specialist and advisory services by local boards of health and the public generally. The composition of the staff reflects the types of services sought by the community. People within industry and commerce have become more health conscious. To meet their demands for services, the position of Fuel and Chemical Engineer was filled by the appointment of Mr. W. E. Lilburn, B.E., A.M.I.E.(Aust.), A.M.Inst.F. A position for a second medical officer was allocated to the Occupational Health Section. Requests have been made for an additional Scientific Officer and two technical assistants. Six new inspectors commenced duties during the year, after being appointed to fill the additional positions created last year. Due to unavailability of accommodation, the District Inspectors for Port Pirie, Loxton and Mount Gambier have not taken up residence in their respective areas, but it is anticipated that they will do so during 1967.

During the year, Dr. E. K. Johnston, District Medical Officer, resigned and Mr. A. S. Wilson, biophysicist, retired due to invalidity. Having reached the statutory retiring age, Public Health Nurse G. L. Byrne left the Service in November and Sister C. J. Nichterlein, from the Poliomyelitis Branch, was appointed to the position.

At the end of the year under review, vacancies existed for one Medical Officer for Aborigines, one Medical Officer for Gaols and Prisons, one District Medical Officer, one Medical Officer in the Occupational Health Section, one Inspector, and two Inspector's Assistants.

(*b*) LEGISLATION

Health Act and Regulations.—Sections 127 and 128 of the Health Act were amended to exempt gonorrhoea and syphilis from the general provisions of notification under section 127 and to provide for the notification of those diseases direct to the Central Board of Health under section 128. This makes the notification of these two diseases similar to that of tuberculosis.

A new Part—IXC—was inserted after section 146q of the principal Act. It deals with the authorization of persons conducting scientific research for the purpose of reducing mortality or morbidity in the State to gather information and the admissibility of such information as evidence in any legal proceedings.

A new Regulation 105A under the Health Act provides for adequate protection from contamination of food to be used for human or animal consumption and the prohibition of the keeping or sale for animal consumption of any food containing any pathogen. "Food" and "pathogen" are defined for the purposes of this regulation.

Food and Drugs Act and Regulations.—No amendment was made to the Food and Drugs Act. Regulation 4 of the principal regulations under the Food and Drugs Act was struck out and replaced by a revised regulation which, in addition to the previous provisions covering meat-handling hygiene, sets out conditions under which "pet meat" may be handled, stored or sold in premises where food for human consumption is handled, stored or sold. It also makes a reference to buffalo meat and defines "meat" for the purposes of this regulation.

Regulation 18 was amended by addition of permissible residue levels of diphenylamine on apples and pears. A new Regulation 18A deals with spray residues on wheatgrain which is to be used for food.

Regulation 36 dealing with meat, fish and their products was largely rewritten and reconstructed, giving new definitions and setting out revised standards, permitted additions and labelling requirements.

A revised standard for pickles appears in Regulation 55A.

In respect to drugs, Regulation 85 was struck out, and a new regulation inserted, giving a clearer definition of "A.P.F.", "B.P." and "B.P.C." and the standards to which drugs must conform.

A new regulation 85A was inserted to provide for the labelling of medicine dispensed by count or number with the proper name of the drug or drugs contained in it.

A new comprehensive standard of toilet soap was given in the amendment of Regulation 93.

Regulation 104 was varied by the insertion of a number of new drugs in the Poison List. The classification numbers and exemptions were varied for a number of other drugs in the same Regulation.

Regulation 111 was varied by adding names of additional drugs to the list of prohibited poisons.

A new paragraph dealing with advertising contrary to the Food and Drugs Regulations was added to Regulation 151.

(*c*) VITAL STATISTICS

The following information relating to the year 1966, supplied by the Deputy Commonwealth Statistician, is included in this report to show changes in the composition of the State's population, and for purposes of subsequent comparison between this and the incidence of diseases reported during the year. Some figures are subject to minor revision. Details for 1965 are shown in parenthesis.

Population.—The mean population for the State in 1966 was 1,090,357 (1,053,425).

Births.—The number of births registered during 1966 totalled 20,319 (20,891).

The number of births registered increased in each successive year from 1948 to 1961 but since then registrations have decreased. Births registered in 1966 were less than in any year since 1958.

The number of male births for every 100 female births was 107.72. This figure is higher than the average of 105.3 for the previous 10 years and is 1.19 higher than that for 1965. In 1966, 10,537 (10,778) male and 9,782 (10,113) female births were registered.

Still Births.—In 1966, 237 (256) still births were registered. They are not included in births and deaths figures.

Deaths Registered.—A record number of 9,323 (8,788) deaths were registered during 1966. The previous highest total was 8,906 in 1964. The death rate of 8.55 was higher than in each of the years 1960 to 1965.

Infant Mortality.—Infant deaths registered in 1966 totalled 356 (385). The resultant infant mortality rate was 17.52 or 0.91 less than the previous record low in 1965.

There were 233 (263) deaths of children under one month, and 123 (122) deaths of children aged from one month to one year. The main causes of infant deaths from 1962 to 1966 are shown in Appendix 1.

Marriages.—The number of 9,051 marriages registered in 1966 was a record, the previous highest number being 8,680 in 1965. The estimated rate per 1,000 of the mean population in 1966 was 8.30 (8.12). The marriage rate fell generally from 10.55 in 1947 to 6.99 in 1960, but has risen in each of the succeeding years. The average age of marriage for bachelors was 24.67 (24.87) years, and for spinsters 21.82 (21.83) years. The downward trend in the average age at marriage of single persons is continuing.

Summary.—Appendix 2 shows causes for alterations in the composition of the State's population. The rates of registered births, deaths and marriages are per 1,000 of the mean population and the infant death rates are per 1,000 live births.

(*d*) CONTROL OF INFECTIOUS DISEASES

Statistics.—Infectious and notifiable diseases in the Second and Third Schedules of the Health Act, and tuberculosis, are notified to local boards of health and the Central Board of Health. Tuberculosis, gonorrhoea and syphilis are notified to the Central Board of Health in the first place. For details see Appendix 3.

The biggest increase in notifications received was for infective hepatitis 978 (414). Significant decreases were noted for bacillary dysentery 135 (178), rubella 226 (649) and scarlet fever 57 (127), although in respect to the latter disease it must be noted that it has been seriously under-reported during the year (see section on scarlet fever).

No official notifications were received for tetanus, although persons were treated during the year at the Royal Adelaide Hospital. Tuberculosis—both pulmonary and other forms—declined further to 106 (126) and 25 (30) respectively.

There were no notifications of diphtheria and poliomyelitis in 1966.

A total of 256 cases of gonorrhoea and seven of syphilis were notified during the first full twelve months period since these diseases were made notifiable in November, 1965. Further details of these two diseases are given in the report of the Medical Officer concerned with their control.

Infective Hepatitis.—There was a considerable increase in the reported incidence of infective hepatitis, especially during the last quarter of the year. The numbers rose to 978—more than double the number reported (414) in 1965.

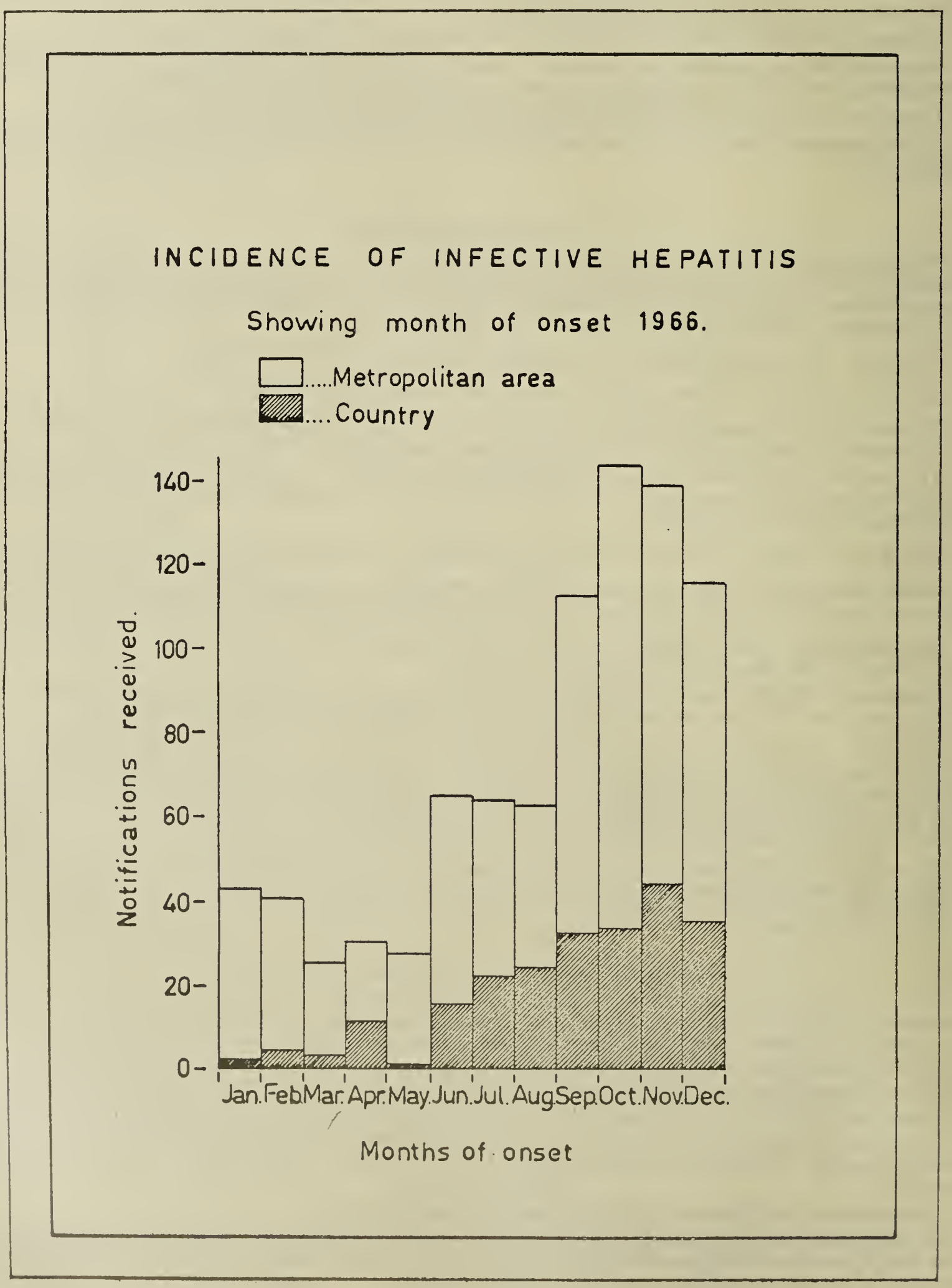
Reports came from most metropolitan and country local boards, notably from Mount Gambier, where 131 cases occurred between June and December. In this town the majority of sufferers from the disease were children in the 5-9 years of age group (78), with children in the 10-14 years of age group being next in frequency (20). Nearly all the children attended the same school, and enquiries made by the District Medical Officer indicated the faecal-oral route of transmission to be the most likely.

At the Mount Gambier Hospital, six 18-year-old nurses were also affected, following which all staff at the hospital were given gamma globulin prophylaxis.

Reports were received throughout the year of 138 persons infected with infective hepatitis in migrant hostels at Glenelg and Pennington. Again the largest number (103) were children under the age of 15 years. Nearly all persons with infective hepatitis occurring in migrant hostels are admitted to the Infectious Diseases Section of the Northfield Wards of the Royal Adelaide Hospital. This is responsible for more consistent reporting of this disease in migrant hostels, as the respective local boards are notified by the hospital once the diagnosis has been established.

The youngest reported case of infective hepatitis was aged 14 months, and the oldest 82 years. There were no deaths due to the disease.

The monthly incidence of this disease is shown graphically hereunder:—



Typhoid Fever.—During 1966, only one case of typhoid fever was diagnosed and reported. The patient was a young married woman who had been touring with her husband in South-West Europe and South-East Asia for some months prior to her return to Adelaide at the end of December, 1965. Her infection was probably contracted outside Australia, as the symptoms of the disease were apparent for several weeks before her return. Close family contacts were investigated, but all tests were negative.

The phage type of the isolated organism was C1.

Scarlet Fever.—Although the number of scarlet fever cases reported for the year was less than for 1965, the actual incidence of scarlet fever in this State was probably higher this year than in preceding years. Several outbreaks occurred in various parts of the State, e.g. the Adelaide Hills, in the district of Coonalpyn Downs and Karoonda, but few of the actual cases were officially notified.

The biggest outbreak occurred at Karoonda during October-November. The town and district had been without a resident medical practitioner for most of the year and the occurrence of a febrile disease with rash among school children attending the area school was thought by the school authorities to be rubella. The District Medical Officer visited Karoonda in November and saw a few of the affected children. His conclusion that the epidemic was one of scarlet fever was confirmed by positive bacteriological results.

It was difficult to establish the number of cases in retrospect but absenteeism from the school gave an indication of the magnitude of the outbreak—83 children were absent for a period of at least a few days out of a total of 355 attending the school. Forty-three children and adults who had signs of ill health were examined and penicillin or erythromycin prescribed for 23 of those showing signs of streptococcal infection.

Twenty-five per cent of swabs taken from throats, noses and septic sores were positive for beta haemolytic streptococcus, Lancefield group A, most of which belonged to type 1, one being type 13.

Bacillary Dysentery.—Fewer cases (135) were notified than in 1965 (178). No major outbreaks were reported, but bacillary dysentery was troublesome in a ward for mentally retarded children at Hillcrest Hospital, and in a ward for elderly women at Parkside Hospital. The predominant organism isolated in these outbreaks was Shigella flexneri type 3.

Of the 279 strains isolated by the laboratories at the Adelaide Children's Hospital and the Institute of Medical and Veterinary Science, 178 were Shigella flexneri, two were Shigella boydii and one was Shigella dysenteriae. The remainder were Shigella sonnei.

Salmonella Infection.—A total of 120 salmonella infections were reported; 86 occurred in the metropolitan area and 34 in country areas.

Salmonella strains isolated by the laboratories at the Adelaide Children's Hospital and the Institute of Medical and Veterinary Science were as follows:—

	Number of Cases
Salmonella typhi-murium	113
Salmonella adelaide	15
Salmonella anatum	9
Salmonella bovis morbificans	8
Salmonella chester	6
Salmonella havana	4
Salmonella panama	3
Salmonella muenchen	3
Salmonella newport	2
Salmonella virchow	2
Salmonella bareilly	2
Salmonella oranienburg	2
Salmonella derby	2
Salmonella infantis	1
Salmonella give	1
Salmonella st. paul	1
Salmonella kaapstad	1
Salmonella enteritidis	1
Salmonella thompson	1
	177

Salmonella adelaide gastro-enteritis occurred in two new born babies in the same nursery at one of the larger private hospitals. The babies were transferred to the Adelaide Children's Hospital for treatment and the nursery was closed until all staff had been investigated and found to be clear of the infection.

Hydatid Disease.—Six persons admitted to the Royal Adelaide Hospital were diagnosed as suffering from this disease. Their ages were 16, 54, 54, 54, 76 and 88 years. Two of them had had previous operations for removal of hydatid cysts; one, a 54 year old female, was a native of Italy and had a history of close contact with sheep and dogs. In two cases, hydatid cysts were found in the lungs (both were operated on) and in the other four in the liver (one operated). Two patients came from the South-East of the State.

A diagnosis of probable hydatid disease was made at the Adelaide Children's Hospital in a nine year old girl who was holidaying in South Australia from Tasmania.

At the Queen Elizabeth Hospital hydatid disease was diagnosed in a 68 year old woman who had previously lived in Burma and China.

There were no deaths due to hydatid disease.

Tetanus.—Although tetanus was not officially notified, seven persons were treated at the Royal Adelaide Hospital—four males, aged 49, 61, 69 and 78 years, and three females, aged 32, 37 and 47 years. All were preceded by injuries such as cuts, lacerations or penetration of limbs by sharp objects. Only one, the 49 year old male, had been actively immunized against tetanus. His immunization took place 26 years ago and his illness was milder and of short duration. Four of the patients required tracheotomy and all eventually recovered. In three, bacteriological confirmation (culture) was obtained.

Poliomyelitis.—No notifications of poliomyelitis were received during 1966. Details of activities and immunization programmes are given in the report of the Poliomyelitis Branch.

Tuberculosis.—The incidence of tuberculosis continued to decrease during 1966. Details are given in the report of the Tuberculosis Branch.

Immunization.—Routine immunization was continued during 1966 by officers of the Branch in areas outside local government control, and by a number of local boards of health in their own areas.

Appendices 4 and 5 show the number of immunization courses given by local boards of health and Departmental officers during the year.

(*e*) REPORT OF THE MEDICAL OFFICER SUPERVISING CONTROL OF GONORRHOEA AND SYPHILIS

MEDICAL OFFICER—DR. J. A. MCGREGOR, M.B., Ch.B.

In November, 1965, gonorrhoea and syphilis were proclaimed under the Health Act, 1935-1967, to be diseases which are required to be notified to the Central Board of Health or local boards of health. Sections 127 and 128 of the Act were later amended to provide for the notification by medical practitioners directly to the Central Board of Health.

During 1966, the Department was officially notified, in terms of the Act, of 256 persons who were infected with gonorrhoea and seven persons infected with syphilis.

Additional information regarding these diseases was obtained from copies, received from the Institute of Medical and Veterinary Science, of any reports indicating that the person from whom the specimen investigated was taken, was suffering from gonorrhoea or syphilis. Further information was also received from various hospitals, the armed services, the South Australian Prisons Department and interstate health authorities.

In all, the Department became aware of a total of 355 persons infected with gonorrhoea and 13 with syphilis in South Australia during 1966.

Of those infected with gonorrhoea, one, a three year old boy, had gonococcal conjunctivitis without evidence of infection elsewhere, one had a Bartholin cyst, one had acute arthritis and three had salpingitis. In one of the latter, the salpingitis was further complicated by peritonitis and abscess formation. Gonorrhoea was known to have occurred in 30 pregnant females and three of their infants developed ophthalmia neonatorum.

Of the 13 persons affected with syphilis, 10 had primary and two secondary lesions. One of these persons was pregnant and her infant had a congenital infection. Two others had developed syphilitic warts.

Officers of the Branch interviewed 473 people to find possible sources of infection and contacts that sufferers may have infected. In the course of their investigations, 1,000 visits were made to various parts of the State.

Investigation of the source of infection of a seven year old aboriginal child indicated that she had probably been infected during interference by a male adult. In another case there was evidence that infection with gonococci had occurred during homosexual intercourse. All other infections investigated appeared to be associated with normal heterosexual intercourse.

A total of 130 (30 in 1965) patients were investigated in the Department's Female Investigation Clinics.

Microscopic examination of smears from 5 (0) of 75 (57) girls investigated from the Vaughan House Girls Reformatory showed the presence of organisms resembling gonococci.

Of the remaining 55 examined at the Royal Adelaide Hospital, organisms resembling gonococci were present in smears from 5 (4), 8 (3) had reactive results to the Gonococci Complement Fixation Tests, two had both positive smears for gonococci and reactive results with the Fixation Test, 1 (0) had a weakly reactive result and 1 (0) had reactive result with the Wassermann Test for syphilis.

An amount of $9,901 ($7,265) was spent by the Department of Public Health during 1966 on investigation and treatment of gonorrhoea and syphilis. Most of this amount was paid to the Institute of Medical and Veterinary Science for bacteriological examinations and serological tests done for private practitioners.

With additional trained staff to interview patients and trade and interview possible sources of infection and contacts who may have been infected by sufferers, more persons could be found who are unaware that they are infected with the organisms that cause these diseases and unaware that they are potential sources of infection. Eradication of infection in these potential sources of infection is essential in the control of these diseases.

Further details are shown in Appendices 6, 7 and 8.

(*f*) SUPERVISION OF ENVIRONMENTAL HEALTH

CHIEF INSPECTOR—MR. D. J. WILSON, E.D., M.R.S.H.

Routine Inspections.—Routine general inspections of local board areas were not carried out, but matters of difficulty or importance have received attention. Complaints and matters directly concerning the Department have been attended to.

Remote Out-Districts.—Ten outback inspections, carried out in areas not under the control of local boards of health, included visits to Andamooka, Coober Pedy and Tarcoola. Approximately 9,670 miles were covered.

Quarterly Meeting of Health Inspectors.—Meetings of Inspectors of local boards of health were held in March, June, September and December. The meetings were well attended and served a useful purpose. Local boards which permit their officers to attend these meetings are to be commended. The meetings aim to obtain uniform interpretation of the legislation and action in local board areas.

Microbiological Specimens.—During the year, 383 specimens were submitted by the Inspection Section, as part of its own work and on behalf of local boards, to the Institute of Medical and Veterinary Science. These were mainly faecal specimens from persons associated with cases of gastro-intestinal disease. The remainder were various foods.

Private Hospitals and Rest Homes.—The Public Health Nurse regularly visited private hospitals and rest homes in the metropolitan area and improvements are being made to these premises.

The Public Health Nurse and Inspectors made approximately 1,000 visits whilst inquiring into 473 persons stated to be suffering or associated with persons suffering from syphilis or gonorrhoea.

Occupational Health.—The Inspection Section assisted Occupational Health and Air Pollution Control officers in many of their activities during the year. These included surveys of the use of lead and benzene; air sampling of work places where lead is used; and air sampling in foundries of fumes arising from the use of polystyrene cores.

Officers assisted in seven hearing conversation programmes by regular audiometric testing of the participants, and in investigations of noise problems of tractors, road-making equipment, railways locomotives (all types), and crushing and screening equipment at quarries near Adelaide.

Inspection of medical X-ray units was begun, to determine compliance with the recommendations of the International Commission on Radiological Protection.

Complaints concerning atmospheric fall-out and air pollution were investigated.

Whyalla District Inspector.—The Whyalla population at present is approximately 23,000. It is increasing at the rate of about 2,000 per annum.

Inspections cover 12 local boards of health on Eyre Peninsula, and out-districts which are under the direct control of the Central Board of Health with regard to health and food problems. The majority of the work is in or near the main centres of Whyalla and Port Augusta and embraces advice, assistance and service to local boards and direct supervision in out-districts.

Inspections of 1,665 septic tank systems were made, of which 1,470 were in the Whyalla area, and 439 permits to use systems were issued, of which 311 were in the Whyalla area.

Port Augusta was visited each week for the purpose of supervising septic tank installations.

Initial surveys were commenced during December, 1966, on the Cummins common drain project.

Premises outside Whyalla Local Board of Health area which provides services to Whyalla City, such as the Abattoirs, Dairy, Piggeries, Nightsoil Depot, have been regularly inspected and improvements effected.

At both Whyalla and Port Augusta Abattoirs, relief meat inspection has been provided during the year for 57 days during the absence of the respective abattoirs inspectors.

Immunization against diphtheria, whooping cough, poliomyelitis, tetanus and smallpox to residents of Iron Knob and Iron Baron was organized by the Whyalla Area Office. Both of these townships are outside local government areas. Three visits were made to each township during the year. The majority of those taking advantage of the visits were persons under 30 years of age.

Septic Tanks.—Three thousand, six hundred and fifteen septic tank installations were approved. Approximately 80 per cent of septic tanks were installed in the outskirts of the metropolitan area and subjected to regular daily inspections. Following inspections (throughout the State), 3,752 permits, authorizing the use of septic tanks, were issued.

Subdivisions.—To determine building allotment sizes suitable for continuous disposal of septic tank effluent and domestic waste waters, 41 subdivisions were inspected at the request of the Town Planner. The subdivisions submitted for assessment varied from a half acre to 300 acres in area.

Common Effluent Drains.—In the near metropolitan areas, additional effluent collecting drainage schemes have been installed in the council areas of Tea Tree Gully, Noarlunga and Mitcham. The installations were supervised and the drainage layouts plotted.

Work on design and installation of drains continued in several country areas.

The remaining 75 per cent of the construction of an effluent collecting drainage scheme was completed at Maitland. All work was supervised and plotting done by this Section.

Country townships of Kapunda, Mount Pleasant, Mannum, Burra and portion of Pinnaroo were surveyed and schemes designed or partly designed. Meadows and McLaren Vale Townships were surveyed and preliminary designs prepared.

At Berri Township, the remaining 25 per cent of the design was completed and construction commenced, and at the year's end 60 per cent of the construction was completed. A subdivision of 25 acres at Berri was surveyed and an effluent collecting scheme design was 75 per cent completed. A similar scheme at Barmera township subdivision was designed and installed.

At Waikerie, a subdivision of 54 allotments was surveyed, a scheme designed and installed, and the remainder of the township was surveyed and a scheme designed.

Meat Works Liquid Waste Disposal.—Surveys were made of land adjacent to meat works at Noarlunga, and oxidation lagoons were designed to give primary treatment to liquid trade wastes with ultimate disposal by surface irrigation.

Over a six month period, 93 samples of the waste liquid were taken for B.O.D. determination, suspended solids and pH. The tests indicated suitable primary treatment was being obtained.

(*g*) SUPERVISION OF FOOD AND DRUGS

Uniform Standards.—The consideration of uniform standards recommended by the National Health and Medical Research Council has continued; some 35 standards and amendments were referred to the Food and Drugs Advisory Committee and considerable progress made towards final drafts.

Legislation.—Amendments to the Food and Drugs Regulations during the year dealt with pet meat, meat and meat products, vitamins in margarine, pickles, beer, drugs, poisons, dispensed medicines and advertising.

Pet Meat.—The amendments to the regulations during the year require all meat, whether for use by humans or pets, to be handled in accordance with the standards laid down for meat for human consumption. If such meat is unfit for human consumption, it is required to be sterilized by boiling and packed in sealed containers before it can be sold in food shops as food for animals.

Date Stamping of Bottled Milk.—The regulation requiring bottled milk to be stamped with the number of the day in the month on which the milk was bottled, was disallowed in Parliament during the year.

Drugs.—Activities in the field of drug control have continued at a high level, particular attention being paid to the reporting of cases of extended treatment with dangerous drugs and the classification of drug addicts. There were three prosecutions under the Dangerous Drugs Act for the illegal possession of drugs.

Amendments to Poison Regulations revised the schedules in conformity with Uniform Schedules recommended by the National Health and Medical Research Council.

Provisions requiring medicines dispensed by count and supplied on prescription to be labelled with the name of the drug came into operation during the year; they have been well received by the professions concerned and have operated satisfactorily.

There have been reports of the possession of the stimulant drugs, particularly the Amphetamines, when these have not been properly obtained on a prescription; the question as to whether such possession should be made an offence is under consideration.

Interstate Conferences on Uniform Standards for Foods, Poisons and Therapeutic Substances.—During the year, the Senior Pharmacist, Mr. R. C. McCarthy, attended 11 meetings and conferences concerned with the preparation of uniform legislation, three each dealing with foods and poisons, two with the Single Convention on Narcotic Drugs, and one each on therapeutic substances, advertising of proprietary medicines and poisons reference centres.

Poisons Reference Centres.—Following the publication of the Commonwealth Poisons Register and discussions at an interstate conference of officers concerned, arrangements were completed for the setting up of a number of Poisons Information Centres in the State. The principal centre is at the Adelaide Children's Hospital, with other centres at the major Government hospitals.

The functions of the centres include the supplying of information to doctors, pharmacists and the general public on the diagnosis and treatment of poisoning.

Supervision of Wines and Spirits.—During the year, 337 licensed premises, including hotels, wine saloons and stores, were visited in the metropolitan and country areas.

Tests were made of 7,602 opened bottles of wines and spirits for sale at these premises, and of these, nine samples were purchased for official analysis. The Central Board of Health subsequently authorized legal proceedings under the Food and Drugs Act for adulteration or misrepresentation against six licensees of hotel premises concerned.

Thirty-six warnings were issued for minor breaches of the Food and Drugs Act.

Analysis of Food and Drugs.—Provision is made in the Food and Drugs Act for taking of samples of food and drugs offered or exposed for sale to determine whether the prescribed standards are being met. The major part of this work in regard to food is undertaken by the Metropolitan County Board and other local authorities.

Details of the samples from all sources analysed during 1966, and subsequent action taken, are set out as follows:—

Article	No.	Result of Analysis	Action Taken
Brandy	1	Failed to conform	One prosecuted
Bread	21	Seven failed to conform	Two warned
Butter	2	One failed to conform	One investigated
Canned Fish	1	Contained 990 p.p.m. tin	No further sales
Flavoured Ice	3	Conformed to Regulations	—
Frankfurts	3	One failed to conform	One warned
Goats Milk	3	Satisfactory	—
Ice Cream	1	Conformed to Regulations	—
Lemonade	1	Satisfactory	—
Meat Additives	6	Failed to conform	Investigated
Milk	749	Twenty five failed to conform	Nine prosecuted Ten warned Two investigated
Mince Meat	77	Twenty five failed to conform	Twenty prosecuted Five warned
Peanut Oil	3	Conformed to Regulations	—
Potatoes	6	Five failed to conform	Five warned
Pure Cream	1	Failed to conform to Regulations	One prosecuted
Sour Cream	1	Conformed to Regulations	—
Rolled Beef	3	One contained SO_2	One prosecuted
Sago Seed	2	One contained sulphate and ammonia	Investigated
Sausages	22	Two failed to conform	Two warned
Sausage Mix	2	Conformed to Regulations	—
Sausage Meat	2	Conformed to Regulations	—
Tinned Sardines	—	Satisfactory	—
Vodka	1	Satisfactory	—
Whisky	2	Satisfactory	—
Wine	1	Failed to conform	One prosecuted

(*h*) SUPERVISION OF OCCUPATIONAL HEALTH AND CONTROL OF AIR POLLUTION

MEDICAL OFFICER (OCCUPATIONAL HEALTH)—Dr. K. J. WILSON, M.B., B.S., D.P.H.

Occupational Health Section—

General Activities.—The Section has continued to give advice on all health aspects of occupation and the occupational environment. Investigations have been made into hazards associated with exposure to chemicals, dusts, noise, heat and radiation, followed by recommendations to alleviate any undesirable situation. Discussions have been held with individual workmen regarding problems associated with their occupations and follow-up investigations made, if necessary. Managements and private medical practitioners have sought consultations on many varied aspects of occupation, such as likely hazards associated with new processes, safety precautions, preventive measures, first aid and medical services for employees. Advice has been given to and investigations made on behalf of members of the general public regarding safe use of insecticides, solvents, reduction of noise and vibration, radiation hazards from radioactive fall-out, and prophylactic action against infectious diseases encountered by family members at work.

In these regards, close liaison has been maintained with the Department of Labour and Industry, the Industries Assistance Branch of the Premier's Department, and industrial safety organizations. The assistance of these bodies is gratefully acknowledged.

Judging by the number of written requests, personal visits and telephone calls received, the impression is gained that the services offered by the Section are becoming more widely known and accepted by management, labour organizations, medical practitioners and the general public. Continued increase in the demand for these services is predicted.

Work requiring investigation, often including extensive scientific investigations, has originated from the following sources:—

Industrial management		12
Labour organizations	7	
Waterside Workers Federation (through the Australian Stevedoring Industry Authority)	7	
		14
Department of Labour and Industry		13
Other Government Departments		7
Local Boards of Health		5
Departmental Surveys—		
Lead	137	
Benzene	309	
Others	44	
		490
Illness of individuals		12
Follow-up investigations		7
Miscellaneous		7
		567

In most instances where corrective action has been found to be necessary to remove a health hazard or nuisance, management has been co-operative in accepting and implementing the recommendations. Whilst this is also true for recommendations following complaints of excessive noise, both occupation and environmental, proposals to reduce high noise levels revealed as a result of surveys initiated by the Section have produced little response from industrial management. The reasons for this are probably many, such as lack of sectional staff for effective follow-up, lack of appreciation by both employers and employees of the harmful effects of excessive noise, and the high cost of noise reduction in many instances. The Section has been requested to prepare a report on this problem for consideration by the Advisory Committee on Noise in 1967.

Conferences and Interstate Visits.—Two interstate conferences were attended by Dr. K. J. Wilson during the year. The first, entitled "Conference on Lead Absorption", held in Melbourne in May, was sponsored by the Broken Hill Associated Smelters and attended by medical and safety officers of the lead smelting industry and the occupational health medical officers of Queensland, New South Wales, Victorian and South Australian Departments of Public Health. Papers were presented by various members on the metabolism of lead, pathology of lead poisoning, diagnosis of lead poisoning, management of lead absorption, and others dealing with various preventive aspects. Free discussion followed each paper. The conference was very successful and of great value.

The second conference attended was sponsored by the Ergonomics Society of Australia and New Zealand, held in Sydney in August. The Society aims to promote learning in and to stimulate research into the relationship between man and his occupation, equipment and environment, and to advance education in and to promote the use of anatomical, physiological and engineering knowledge applied to the practical problems arising during this relationship. Papers were presented covering several aspects of these aims, and generally promoted valuable discussion.

Two meetings each of the Occupational Health Committee and the Radiological Technical Advisory Committee of the National Health and Medical Research Council were held during the year, and were attended by Dr. G. H. McQueen or Dr. K. J. Wilson acting in his stead.

The Annual Meeting of Scientific Officers engaged in the field of Industrial Hygiene was attended in Sydney on 26th and 27th May, 1966, by Mr. G. F. Sweetapple. Representatives were present from all States of Australia, the Commonwealth and New Zealand.

The subjects presented were methyl bromide fumigation, road tar fumes, furane and diphenyl methane di-isocyanate for core setting materials used in foundries, nitro-glycerine and its threshold limit, health hazards from welding operations, ozone and nitrogen peroxide reactions and special techniques in sampling and analysis. In addition, the health hazards in the manufacture of manganese sulphate, and in the manufacture of superphosphate, were considered. Following each subject, an informative discussion took place.

During the year, Mr. R. G. Stafford, Scientific Officer, visited the New South Wales Department of Public Health, Occupational Health Division, and the Commonwealth Acoustic Laboratories, Sydney.

Various means of instigating hearing conservation programmes in industry were discussed, together with the effects of impact noise on hearing. A programme to enable the correlation of results from various dust sampling techniques was formulated with members of the New South Wales Occupational Health Division, and the problems involved in dust control systems for quarries were also considered.

Advisory Committee on Noise.—The Committee met on four occasions during 1966. Some of the main topics considered were exposure of agricultural workers to excessive noise, the range of noise levels associated with heavy earth-moving equipment and the principles involved in reduction of excessive noise.

As an aid to understanding the effects of exposure to high noise levels and the need for protecting hearing, the Committee aided the Section in the production of a pamphlet entitled "Hearing Conservation". The pamphlet is intended primarily to be distributed to employees in industries where hearing conservation programmes are being introduced to help gain acceptance of the use of hearing protection.

To assist the Committee in its function as an advisory body, the Section has been asked to review its activities in the field of noise control. This review, to be presented to the Committee early in 1967, will be a comprehensive report covering details of noise surveys, engineering noise abatement and hearing conservation programmes.

Radioactive Substances and Irradiating Apparatus Regulations.—The compliance by users of radioactive substances and irradiating apparatus with relevant regulations has been supervised by the Section throughout the year. In addition to specific investigations and surveys, applications for licence or registration have been checked, Film Badge Service results scrutinised, and recommendations made for safe storage and transport of radioactive material.

The number of licences and registrations granted under the Regulations are shown in Appendix 9.

Film Badge Service.—Radiation workers within South Australia use the Film Badge Service operated by the Commonwealth X-ray and Radium Laboratories as a means of personnel radiation monitoring.

The total number of organizations receiving film badges at the end of 1966 was 335, embracing about 1,600 persons, compared with 294 organizations, covering 1,400 persons, at the end of 1965. Organizations using the Service are as follows:—(Figures for 1965 are shown in brackets).

33	(30)	Industrial firms or departments
147	(145)	Dentists
45	(39)	Hospital departments
37	(35)	Scientific organizations or departments
7	(5)	Chiropractors
5	(2)	Veterinary surgeons
61	(38)	Private medical practitioners

During the year, several excessive doses were recorded for short term exposures. These were investigated and advice given by officers from the Section to prevent repetition.

One person engaged in industrial radiography exceeded the 5 rem annual exposure allowed by the Radioactive Substances and Irradiating Apparatus Regulations. Following recommendations by the Section, he was transferred to other work with minimal risk of exposure.

New Equipment.—Major items of new equipment purchased during the year included a Printing Calculator, to be used for the statistical analysis of results; a Gravimetric Dust Sampler, to be used for determining dust exposures in industry; and a "Vitalograph", for carrying out lung function tests in employees in various industrial installations; a Mine Safety Appliance Personal Sampler, which has widespread use in the collection of many types of air samples over a prolonged period; and a Model 40 Mine Safety Appliances Combustible Gas Indicator. From this instrument solvent vapour concentrations for a wide range of substances can be read directly. This effects a considerable saving of time over normal collection methods and overcomes the inevitable delay in analysis.

Investigations of Chemical Hazards—

Cyanide.—Following the sudden death at work of a man employed in heat treatment of metal parts, a request was received from the Police Pathologist to investigate the possibility of cyanide poisoning. Part of the deceased's job was to top up the heat treatment vat with sodium cyanide, and a significant blood level of cyanide was found at post mortem. Due to the lack of reference standards, blood cyanide levels in both heat treatment workers and a control group were measured as part of the investigation.

Lead.—The survey involving the use of lead in industry, commenced in 1964, was continued. As it was some years since inspections had been made in the printing industry, follow-up visits were made at a number of metropolitan printing premises as well as first inspections of some metropolitan and country businesses.

It was pleasing to find improved conditions in some establishments. This was particularly so where rebuilding or expansion had taken place. Air sampling was carried out, and is still continuing in some of the larger premises where big quantities of type metal are in use. The results of air sampling so far have shown that where remelting of type metal takes place, and where type moulding machines are used, conditions are generally satisfactory.

Within this survey, other industries inspected were country and metropolitan battery manufacturers and repairers, crash and radiator repairers, container makers and bearing manufacturers.

In most cases the amount of lead used was so small and the frequency of its use so low that the hazard to health of operators taking reasonable precautions was slight.

Although a relatively small amount of lead was used by one country battery manufacturer and repairer, working conditions were so unsatisfactory that one of the operators was affected by lead. Air sampling confirmed these conditions. The result of this investigation eventually led to the relocation of the business premises, and the manager's agreement to provide protection to persons working with lead within the premises.

At the larger metropolitan battery manufacturers, air sampling was carried out at intervals throughout the year, during processes which would subject the operator to hazards. Close co-operation was maintained between the Department and management when any change of process involving lead took place.

Further air sampling was carried out at a large motor body building factory when solder loading and grinding took place. The management sought the co-operation of this Department in determining the effectiveness of different types of protective hoods. Air sampling within the hood under actual working conditions was subsequently carried out, and each type of hood was found to be satisfactory. Assistance was given to the management of this factory so that its own assessment of hygienic conditions relating to lead could be introduced.

Blood and urine samples were collected from twenty-four employees, variously engaged in solder making, battery making and lead burning. Evidence was found in three men of excessive lead absorption, and appropriate advice was given.

Benzene.—During the year, a survey to determine the approximate quantities of benzene used occupationally in South Australia and the conditions of use, was initiated.

The opportunity was taken during this survey to inform users of the dangers of this hydrocarbon. In some cases where this specific solvent was used for cleaning purposes, a recommendation to change to a less toxic solvent was implemented.

This survey is to be completed in 1967. To date it appears that the shoe manufacturing and repair industry is the largest user of benzene, which is an ingredient of some adhesive preparations. Air sampling will be carried out to determine the extent of operational exposure in this and other industries.

Pesticides.—Although no surveys were carried out this year to examine a particular group of pesticides, a specific matter was investigated as a result of suspected arsenic poisoning. In another instance, assistance was sought regarding protective equipment and necessary precautions by an agricultural pesticide manufacturer. Air sampling and urine tests on employees were made to check the efficiency of handling methods and ventilation.

Artificial Fertilizers.—As a continuation of the work carried out last year in the assessment of concentrations of fluoride fumes evolved in the manufacture of superphosphate, a follow-up investigation, including air sampling of the working environment, was made. Prior to this, meetings had taken place with executives of the company, who agreed to make specific modifications for removal of the fumes. The results of further tests showed that the modifications achieved the desired reduction of fluoride fumes to safer limits.

Air sampling was also carried out in the working environment of another superphosphate manufacturer. Except for one location, concentrations of fluoride fumes were satisfactory. This matter is under discussion with executives of the company.

Foundry Fumes.—As the result of a complaint forwarded through the Department of Labour and Industry, an investigation was carried out regarding health hazards associated with the use of furane resins in foundries. Air samples were taken at several foundries. The result of the investigation showed that the use of these resins did not constitute a hazard to health provided reasonable precautions were taken.

Another complaint was received from the same source regarding the fumes evolved when an additive was introduced to molten iron to impart specific properties. The nature of the fumes was investigated. Due to their relatively low toxicity and short duration, there was little hazard to health.

The fumes evolved, and their likely hazard to health, when molten metal is poured upon consumable polystyrene patterns is still being investigated at several foundries. This investigation involved the taking of a number of prolonged air samples; so far no conclusions have been drawn.

Welding.—Zinc concentrations were measured to determine the hazard to health of operators welding and cutting galvanized steel structures. Provided that there was sufficient air movement and the welding or cutting did not take place in enclosed spaces, conditions were generally satisfactory.

Sulphur Dioxide.—Complaints of sulphur dioxide fumes from combustion processes affecting nearby workers are still being investigated, and negotiations are proceeding to alleviate the trouble. In addition, extensive air sampling is being carried out in collaboration with technical personnel of the organization emitting the fumes to determine comparison between instantaneous automatic and integrated daily sampling.

Solvents.—During the year, six investigations were carried out to determine solvent concentrations. In three of these instances, the solvent was trichlorethylene, and in only one instance were conditions found unsatisfactory. In this case, recommendations were made that air velocities be increased in the exhaust ventilation system.

A follow-up inspection was made of a metal degreasing plant which previous inspections had shown to be unsatisfactory as operators were being affected by trichlorethylene. Inspection revealed that this process had been superseded by one using a less toxic solvent, which was found to be more satisfactory.

One investigation involved the solvent fumes from a paint spraying booth entering an adjoining work room, while another involved the manufacture of adhesive substances. Appropriate recommendations to control fumes were made in the former, while conditions were found to be satisfactory in the latter case.

Ill health of an employee using tetrabromoethane in an ore-extraction process was investigated. Liver function tests were made which indicated that this chemical was the probable cause of the illness. Tests were repeated until normal liver function returned.

Information was given to an interstate health department regarding current practices and usage of perchlorethylene for dry cleaning in South Australia.

Comments were given in respect of a draft standard specification of the two solvent materials.

Service to the Australian Stevedoring Industry Authority—Assistance was requested on six occasions by the Waterside Workers' Federation through the Australian Stevedoring Industry Authority. Three of these problems involved irritating odours in the cargo; two involved the spillage of chemicals, while the other was due to a dusty cargo. Appropriate recommendations were made and assurances given.

Carbon Monoxide.—Air sampling was carried out in two widely different working environments to determine carbon monoxide concentrations.

In one instance, this resulted from the exhaust gases emitted by motor vehicles being tested within a workshop. In the other instance, the air contaminant was present in products of combustion during the burning of lime. In both cases, recommendations to alleviate the hazard were made.

Miscellaneous.—Many requests for investigations were received during the year from a variety of sources. The resulting inspections led to the collection of air samples for a number of air contaminants.

One instance involved the question of payment of an allowance to operators for ill effects likely to be sustained during change-over of chlorine cylinders. Air sampling verified that, provided reasonable precautions were taken, there would be no ill effects.

The harmful effect of ammonia fumes evolved during the silvering of mirrors was the subject of another request. In this situation, the concentration and time of exposure to which the operators were subjected was considered excessive. Negotiations are proceeding with the management of the firm to reduce the hazard by improved ventilation.

In another instance, chromic acid fumes from chromium plating and trichlorethylene fumes from degreasing operations were thought to have been responsible for the illness of a worker in a particular section of a factory. Our assessment of the situation (on which a compensation payment depended) indicated that the operator would not have been effected while carrying out his normal duties.

An inspection of spray cleaning with a detergent mixture on traction machinery was requested by a trade union. Advice was given regarding the precautions to be taken while the operation was being carried out.

It was considered by a medical practitioner that the liquid, which collected in gas measuring apparatus which his patient repaired, might be responsible for the patient's illness. Analysis of the substance was carried out, and the toxicity of the components investigated. It could not be proved that the liquid would have affected the health of the operator.

Three instances of objectionable odours pervading work places were investigated. In one instance, acrolein was generated from the dehydration of fats in a fish shop, and entered an adjoining shop. In the second instance, an odour was noted in a public building after it has been closed for several hours. It was found that a musty odour from the basement was convected to the upper floor by heat generated by electric apparatus in the basement. Insufficient ventilation in both cases aggravated the situation. In the third instance, the burning of plastic materials was the source of the objectionable odour, and its combustion elsewhere was the remedy.

Exposure of operators to formaldehyde fumes from a glue material was investigated at a board-making factory. Air sampling proved that concentrations encountered were satisfactory.

The use of hydrofluoric acid in the treatment of stainless steel tubing has been observed, and the extent of operational exposure to this contaminant will be measured.

An investigation is proceeding as to whether the dangerous substance beta naphthylamine is still being used in imported rubber articles, and if so whether persons reclaiming this rubber are at risk.

Respiratory Protection.—The Section has continued giving advice in answer to inquiries regarding effective respiratory protection for various hazards.

Testing of a specific type of respirator cartridge by courtesy of the New South Wales Division of Occupational Health has been completed. It has not been shown that aging of the cartridge significantly decreases its efficiency.

Investigations of Physical Hazards—

Inspection of Dental X-ray Installations.—Following the "surpak" survey of dental X-ray machines carried out in 1965, a follow-up inspection of these units was carried out during 1966. In addition, six new units were inspected for the first time.

It was found that the recommendations made with regard to defective machines had been carried out in all but a few instances; and further action was taken in these cases to ensure that the units were corrected.

A total of 174 machines were inspected during the year.

Inspection of Medical X-ray Installations.—The Radiation Protection Standards applicable to medical X-ray installations, as laid down by the International Commission on Radiological Protection, have been adopted by the Section. To date, 205 installations have been inspected for compliance with the above standards, which embrace such factors as primary beam filtration, tube-housing radiation leakage, integration of radiation exposure, operator screening, and screening barriers incorporated in the structure of the installation. This survey has not yet been completed.

The principal safety standards used by the Section as a basis for assessing the radiological health hazards associated with the use of diagnostic medical X-ray equipment were consolidated as a Code of Practice during August, 1966. Copies of this code have been made available to users of diagnostic medical X-ray equipment.

Survey of Industrial Radio-isotope Limit Indicators.—Satisfactory installation of 11 Bin Level Indicators at a cement plant was discussed with members of the Section, to ensure minimum radiation exposure to employees during installation and subsequent plant operation. The installation of the units was subsequently supervised by a member of the Section and, following installation, all indicators were examined for excessive radiation leakage from the source housing, adequate control of the primary radiation beam, and appropriate labelling of the source as required by the Radioactive Substances and Irradiating Apparatus Regulations.

Complete specifications, detailing the type of isotope, specific activity at the date of installation, use or application of indicator and its location within a plant, and the radiation distribution within the vicinity of the source, for each of 52 such indicators are now held by the Section. This represents an increase of 15 units during 1966.

The radio-isotopes examined are incorporated in industrial equipment used to control such factors as the specific gravity of brine, the level of cement in storage silos, the moisture content of soil, and the weight of iron ore carried by a conveyor system.

In no case examined was the radiation dose-rate in the vicinity of the source such that it would cause any employee to receive an excessive dose of radiation under normal working conditions. All source holders were appropriately labelled and the beam control shutter on all sources was operable.

Radiation Hazards Associated with Foetal Transfusion in the Treatment of Severe Haemolytic Disease.—At the request of the Department of Obstetrics and Gynaecology, University of Adelaide, an evaluation of the radiation hazards associated with the above procedure was made.

The radiation doses received by the mother and foetus were measured and in no instance was the dose found to be excessive when compared with the doses asssociated with other commonly used radiographic techniques such as pelvimetry or barium meal examination. The doses to the skin and thyroid gland of the operator were also measured and were not excessive. However, some recommendations were made for minor modifications to the technique to reduce further the exposure to radiation of both the patient and the operator.

Dose-rate measurements were conducted during five consecutive transfusions, and the results obtained are given below:—

INTEGRAL ABSORBED DOSE

	Maternal		Foetal
Case 1	6.0 kg rad		0.29 kg rad
Case 2	5.0 kg rad		0.17 kg rad
Case 3	4.0 kg rad		0.14 kg rad
Case 4	5.6 kg rad		0.14 kg rad
Case 5	5.5 kg rad		0.13 kg rad
Average	5.2 kg rad	Average	0.17 kg rad

(Kg rad = Kilogram rad)

Use of Luminous Paint Containing a Radioactive Substance.—Two instrument repair shops using radium paint for the repair of luminous dials were inspected regarding storage and handling of the radioactive material.

"Wipe" tests for contamination of the storage pots and work benches showed no evidence of significant radium contamination. Further, total body radiation monitoring of the employees concerned with the above work indicated that the body burden of radium in each case was considerably less than the recommended maximum permissible value.

Service to Industry and Other Organizations.—During the year, advice was given on the design and construction of two industrial radiography bays, the transport of radioactive material and the use of Krypton 85 in smoke detectors.

A series of tests was conducted to determine the lead equivalent of a range of lead impregnated plastic vinyl material, between 60 kv and 90 kv.

As a contribution to studies of radioactive fall-out from atmospheric contamination due to nuclear weapon testing, the Section arranged for 30 members of the Departmental staff to undergo tests in the Total Body Radiation Monitor at the Royal Adelaide Hospital. The results indicated that the total body burden of Strontium 90 in each case was well below the acceptable maximum recommended by the International Commission on Radiological Protection.

Noise Surveys.—Thirty five noise surveys were completed during the year in the following industries:—Quarrying, shipping, agricultural, metal casting, timber processing and sheet metal working.

In carrying out the above investigations, the noise levels created by diesel traction equipment, presses, pneumatic grinders, shake-out tables, rumblers, diesel engines and cupola furnaces were recorded.

Some typical overall noise levels and their associated octave band analyses recorded during the above investigations are given below:—

Noise Source	Overall S.P.L.	Midfrequency of Octave Band (cps)							
		62.5	125	250	500	1000	2000	4000	8000
Pneumatic grinder	100	72	73	88	85	87	90	90	82
100 h.p. tractor	92	89	82	81	76	80	74	64	57
300 h.p. tractor	110	88	98	110	102	100	96	87	76
Primary crusher	100	90	92	92	92	91	91	90	88
Primary screens	109	82	88	96	100	102	104	103	94
Shot-blasting	104	100	103	96	94	90	88	89	83
Cupola furnace	96	87	94	84	78	70	62	52	44
Pneumatic drill	94	90	90	86	84	78	77	75	80
Rumbler	96	80	84	87	88	88	86	85	78
Shake-out table	106	97	90	90	91	85	89	93	90

Hearing Conservation Programmes.—Hearing conservation programmes involving pre-employment ear examination and audiometry, fitting and supervision of wearing of ear protection and bi-annual audiometry have been continued. During the year, programmes were commenced for employees of two stone-cutting firms and two timber processing companies, making a total of eight programmes currently being conducted by the Section.

Dust.—A preliminary survey of the dust exposure associated with the grinding and sampling of rock for analytical purposes has been undertaken. It is proposed to carry out extensive gravimetric dust sampling in the breathing zone of operators employed at this task early in 1967.

Dust conditions associated with the unloading of coloured cement from the hold of a ship were investigated at the request of the Australian Stevedoring Industry Authority; it was found that the cement had a free silica content of less than 0.05 per cent and therefore the dust was not likely to be a hazard to health.

The employee exposure to asbestos dust during the process of insulating a new building structure was investigated; simultaneously the efficiency of the protective masks made available to the employees concerned was evaluated. It was found that the particles of asbestos in the respirable size range were effectively removed from the air by the protective masks, and that the operators were not exposed to a health hazard during this process.

Exposure to some industrial dusts and chemicals causes a reduction in effective respiratory capacity. The acquisition of a spirometer during the year made it possible for these effects to be measured in groups of exposed workers. This had the great advantage of demonstrating the actual effects of exposure in any given situation rather than relying upon air sampling which, for many of these substances, is difficult.

Two groups of paint sprayers, engaged in applying undercoat and final coat to car bodies, were tested for variation in forced vital capacity and timed forced expiratory volume over one week. Measurements were taken before and after the Monday and Friday shifts. No significant variations were found.

Air Pollution Control Section—

Major Activities.—To help provide a suitable basis for proposed clear air regulations, an appreciation of the nature and size of South Australia's air pollution problems was sought throughout the year. This appreciation was related to conditions in other States, by observation, consultation and study of legislation in Australia and other countries, so that our own needs can be related to the practical experience of others.

Informal and formal investigations of both general and particular industries were made, including studies of steam raising and fuel usage practices in South Australia, the Clay Products industry, and a more formal study of bitumen refining in South Australia to assist the Commonwealth Health Department with a problem in Darwin.

Results of fall-out measurements and sulphur dioxide and smoke monitoring were examined as indications of pollution rates; complaints of pollution received from private individuals, local authorities and other Government agencies were investigated and advice was given.

Liaison was established with Commonwealth and State Government Departments, semi-government and local authorities, public utilities, technical bodies, industries and industry groups, equipment suppliers and manufacturers and others, to determine initial information sources, associated authorities and bodies involved in the many aspects of air pollution control.

Initial considerations and recommendations for legislation were derived and a report on these facets was commenced (for presentation in 1967).

Interstate and Country Visits.—To gain first hand information on established air pollution control organizations, principles, problems and procedures, and to establish a satisfactory relationship, a visit was made by the Engineer (Air Pollution) (Mr. W. E. Lilburn) to Departments of Public Health, Clean Air Sections, in Sydney and Melbourne in April.

In June, the annual meeting in Melbourne of technical officers from Clean Air Sections of all States of Australia and also New Zealand was attended by Mr. Lilburn, who presented a short paper on "The Organization of Air Pollution Control Activities".

In conjunction with Mr. Sweetapple of the Occupational Health Section, visits to country industrial areas, including Port Pirie, Port Augusta, Whyalla, Mount Gambier and Millicent, were made to local authorities, to discuss the Clean Air requirements, establish potential problems and assist with existing ones.

Complaints.—Fourteen complaints of supposed air pollution were investigated, usually in co-operation with other officers of the department and/or local boards of health. These ranged from odours from a meat processing plant, causing a nuisance to people approximately three miles away under certain conditions, through particle fall-out from a wood waste incinerator, to odours from an oil refinery causing distress to children at a school three miles away.

Requests for Advice.—Many requests for information on proposed clean air requirements and methods of controlling existing pollution were received from local boards, industry, and equipment manufacturers and suppliers. Eight major industries have requested information on specific requirements for control of new or proposed plant. Two manufacturers were provided with sketch plans and reports on what plant design would be necessary to reduce pollution, following requests for assistance from local boards of health.

Test Equipment.—The purchase of one of the prime instruments for use in air pollution control work, an isokinetic sampler for flue gas solids, was approved.

A suitable unit (B.C.U.R.A. type sampler by Airflow Developments—United Kingdom) was ordered for delivery early in 1967.

Fall-out Gauges.—Dust fall monitoring was performed at established sites in the metropolitan and country areas as in the past. The average rates of fall-out for the 12 months period from July, 1965 to June, 1966 are shown in Appendix 10.

An initial appraisal of this system in relation to gauge location and expression of results was made and a more detailed study of the above facets is proposed.

Sulphur Dioxide and Smoke Monitoring.—In collaboration with the Occupational Health Section, the results were studied and minor changes to the units to improve ventilation and cooling were suggested, to prevent occasional stoppages in hot weather at various locations, suspected as being due to overheating.

To reduce operating expenses involved in servicing these units over the Christmas period, an extended service period was proposed during this time and was implemented late in the year.

Four new metropolitan stations located at Birkenhead, Rosewater, West Terrace and Hindmarsh, and two new country stations, one at Port Augusta West and the other at Port Pirie, were put into operation. The original monitor at Port Augusta was moved during the year from the site at the Council Chambers to the Port Augusta Oval. The monitor at Port Pirie was re-located at Solomontown.

The new units bring the total number of monitors operating regularly to 11.

Assessment of sulphur dioxide concentrations and smoke densities in the Port Stanvac area, by a monitor operating for a period at several different locations within the area, was terminated. Data for weather conditions during the same period of time are being obtained by the Bureau of Meteorology, and an attempt is being made to determine whether smoke densities and sulphur dioxide concentrations in areas in which the sample station was located have resulted from a specific source.

The 1966 monthly averages and the corresponding highest daily readings for smoke density and sulphur dioxide are given in Appendices 11 and 12.

(*i*) REPORT OF THE MEDICAL OFFICER FOR GAOLS AND PRISONS

MEDICAL OFFICER FOR GAOLS AND PRISONS—Dr. G. VINER SMITH, M.B., B.S.

Supervision of the health of inmates of gaols and prisons in South Australia was carried out by the Medical Officer for Gaols and Prisons and two medical orderlies of the Prisons Department, with the assistance of other medical officers of the Branch, when necessary.

At Adelaide Gaol, the total number of persons seen on sick parades was 6,993, of which 4,101 were new admissions and 2,892 had reported sick. At Yatala Labour Prison, the total number of persons seen on sick parades was 2,222.

During the year, 131 X-rays were taken at Yatala Labour Prison. Prisoners were admitted to hospitals as under:—

Royal Adelaide and Queen Elizabeth Hospitals	39
Northfield Infectious Diseases Hospital	4
Mental Hospitals	4

There was no major epidemic, but immunization was done on all contacts of men admitted to the Northfield Infectious Diseases Hospital.

The medical service continues to be below a desirable standard and will not improve until at least one more full time doctor is appointed.

Medical orderlies now work a seven day week and although this provides a better cover, it dislocates surgery work owing to the large period when one man is off duty or on leave. An extra orderly for relieving work is needed.

New surgery premises at Yatala Labour Prison are a great improvement on the primitive quarters previously used.

Dental examinations were made of 337 prisoners at Adelaide Gaol and 1,506 at Yatala Labour Prison. A full time dentist is urgently needed to provide a service for prisoners. However, adequate facilities for a dentist have still not materialized at Yatala Labour Prison.

Optician.—The new system is working well and 43 prisoners have needed spectacles.

Chest X-ray Survey.—This was again carried out at the Adelaide Gaol and Yatala Labour Prison; no active tuberculosis was found. The Director of Tuberculosis is negotiating to obtain a 70mm. machine from the Royal Adelaide Hospital for routine chest examination at Adelaide Gaol.

Red Cross Transfusion Service.—Following an offer by prisoners to donate blood, three visits were made by the mobile unit. Further visits will be made regularly.

General.—The general hygiene of the prisons has been continually under review, and unsatisfactory features have been reported. At the Adelaide Gaol the new kitchen floor and vegetable room are great improvements. Similar attention to unsatisfactory conditions at Yatala Labour Prison is needed.

Country gaols have all been inspected, but this should be done more often. Until a second Medical Officer is appointed, it will be difficult to increase the present number of visits.

A prison hospital is still the greatest need in providing an adequate medical service.

(*j*) HEALTH EDUCATION

Active work in this field continued during 1966 with addresses to interested community groups, displays, distribution of publicity material, meetings of health inspectors and attendance at local board meetings.

A display, showing the various fields of activity covered by the Department, was exhibited at the Third Convention of the Australian College of General Practitioners. Information on tetanus was given through a display in a showcase adjacent to a busy city bus stop.

Talks, supported by films, on proper methods of food handling were also given to groups engaged in trades dealing with food handling.

Quarterly meetings of health inspectors continued this year and were useful in informing these officers of current problems and suggesting uniform methods of approach.

Officers of the Branch attended local board meetings and assisted members with particular problems concerning aspects of community health. A number of meetings in country towns was also addressed by officers of the Department regarding common effluent drainage schemes.

Royal Society of Health.—At examinations conducted by the Society's South Australian Board of Examiners, 36 candidates sat for the Diploma of Health Inspection, but only 17 candidates were successful. The seven candidates who sat for the Diploma of Meat and Other Foods Inspection passed the required examinations.

(*k*) MEDICAL EXAMINATIONS

Persons awarded cadetships, applicants for permanent appointment to the South Australian Public Service and for acceptance by the South Australian Superannuation Fund were medically examined by officers of the Public Health Branch. A total of 993 people were examined and medical reports of a further 173, who were examined by medical practitioners elsewhere in the State, were also checked.

In addition, 33 officers of the Mines Department were examined for medical fitness to carry out surveys in areas of the State where medical attention is not readily available. Nine Harbors Board pilots, 16 applicants for loans from the Housing Loans Redemption Fund, and ten others were also examined.

These medical examinations provide a valuable occupational health service.

3. SCHOOL HEALTH BRANCH

PRINCIPAL MEDICAL OFFICER—Dr. C. O. FULLER, M.B., B.S., D.P.H.

The professional staff at the end of 1966 consisted of:—

Principal Medical Officer

Medical Section	Deafness Guidance Clinic	Dental Section
Senior Medical Officer	Three Otologists	Acting Senior Dental Officer (Field Service)
Eight Medical Officers	(part-time Consultants)	Eleven Dental Officers
Senior Sister	Three Audiometristes	Eleven Dental Assistants
Nine Sisters		Senior Dental Officer (Training School)

The annual visit areas commenced in 1964 have been continued, but the coverage of schools under the two programmes has become unbalanced due to staff difficulties during the year. Illness, leave and resignations reduced the effective strength and the country programme in particular fell behind.

MEDICAL SECTION

Examinations carried out in Education Department Schools.—The number of children examined in Education Department schools during 1966 was 89,040. The total Education Department school enrolment for 1966 was 216,424. School doctors visited 367 schools. No examinations were conducted during the year by private medical practitioners on Eyre Peninsula. For details of examinations, see Appendices 13 and 14.

The parents of 80 children requested that their children be exempted from medical examinations.

Examinations carried out by School Health Branch staff at 169 Rundle Street, Adelaide.—

(1) *Medical Examinations of School Children seen previously at School.*—Children may be asked to attend head office for further assessment of a particular defect before being referred on to their family doctor, hospital or eye specialist. Teachers and parents occasionally bring children to head office for advice and assessment of a particular problem. During 1966, 264 children were seen for additional assessment.

(2) *Medical Examinations Apart from School Children.*—Two thousand, nine hundred students entering or leaving the Teachers Colleges, or applying for Teaching Scholarships, Junior Teaching positions and Laboratory Assistantships, were medically examined in 1966.

Teachers referred by the Education Department were seen before returning to duty from sick leave. Applications from teachers for invalidity pensions referred by the Education Department were considered and, where necessary, the applicants were examined. A total of 695 teachers were seen during 1966. In addition, 32 children, travelling interstate with cricket, basketball and football teams, were medically examined.

The total number of examinations carried out at head office was 3,891.

Health Education Lectures.—These were continued during 1966. Dr. C. O. Fuller spent one term in each college:—

1st Term—Western Teachers College, six lectures per week.

2nd Term—Adelaide Teachers College, eight lectures per week.

3rd Term—Wattle Park Teachers College, seven lectures per week.

He also set and marked one question in the final examination paper for each college.

Dr. Fuller continued lecturing on the Nurses Lecture Panel at the Royal Adelaide Hospital and the Adelaide Children's Hospital.

Paediatric Refresher Week.—Permission was granted for medical officers to attend the refresher week at the Adelaide Children's Hospital.

Mothers' Clubs.—The demand for speakers continued and 18 metropolitan and country Mothers' Clubs, School Committees or Parents' Groups were addressed by medical and dental officers.

Follow-up Work.—This has been discontinued temporarily due to staff shortages.

Defect Notices.—Under the arrangement approved by the Australian Medical Association, 3,225 forms S.H.S. 5 were returned by doctors and specialists to whom children were taken by parents. Their co-operation is gratefully acknowledged, as it enables this section to complete its records and follow the progress of these children.

S.H.S. 5 Forms Returned—

Metropolitan	2,002
Country	1,223
	3,225

Infections in School Children.—A total of 5,482 cases of communicable disease in school children was reported to teachers in State schools during 1966. Details of these are shown in Appendix 15.

DEAFNESS GUIDANCE CLINIC

The Deafness Guidance Clinic completed its eighth year with a total of 3,167 attendances.

New cases were referred from the following sources:—

	Per Cent
Officers of the School Health Services	78.2
Family doctors	7.1
Parents	5.7
Others (Kindergarten Union, Teachers, Psychology Branch)	9.0

The liaison with the Education Department through the Advisory Panel for Deaf and Hard of Hearing Children has been maintained.

The monthly lists of all children discovered to have a significant loss have been continued and 338 were made the subject of specific letters. Of these, 182 were discovered at the initial test.

In addition to children, tests were carried out on student teachers, scholarship applicants and public servants.

Screen Testing in the Field.—Audiometric testing was conducted in Education Department and private schools and pre-school kindergartens associated with the Kindergarten Union of South Australia Incorporated.

A total of 18,657 children had pure tone audiometer tests. Of these, 899 were found to have some hearing loss at the time of testing. Parents were notified accordingly and, where possible, further testing was carried out in the Deafness Guidance Clinic.

The percentage of defects found was:—

	Per Cent
Audiometristes	4.8
School Sisters	3.2

Audiometers supplied and maintained by the Commonwealth Acoustic Laboratory were used for all field work.

Appointments at Deafness Guidance Clinic.—To avoid patients overlooking appointments, reminder notices were sent and this was responsible for keeping missed appointments to a minimum.

The figures for New Cases, Retests and Disposal are given in Appendices 16 and 17.

DENTAL SECTION

The year began with 12 dentists in the service. There were no new graduates from the studentship scheme until December, 1966, when five graduates joined the Dental Service. The number of studentships remained stationary at 15.

During the year, the Senior Dentist (Mr. M. L. Kranz) and three other dentists resigned from the service. Mr. D. Roder was granted leave without pay to undertake postgraduate study in the United States of America.

This has been a significant year in the history of the Dental Section because planning was begun for the opening of a training school in February, 1967, for the training of girls to serve in the Dental Section along similar lines to the New Zealand School Dental Nurse Scheme.

In preparation for the commencement of this training scheme, arrangements were made, by courtesy of the New Zealand Government, for an officer of this Department to visit New Zealand to work in various Dental Nurse Training Schools for a period of familiarization and training. Mr. I. A. Stead, who had completed his Bachelor of Dental Surgery degree at the University of Adelaide under the Departmental studentship scheme and who was in his second year of service as a Dentist in the Department, was selected for this training and was appointed as a Senior Dentist.

Areas in which school children were treated during the year were:—

Streaky Bay	Peterborough
Wudinna	Karoonda
Kimba	Lucindale
Leigh Creek	Lameroo
Hawker	Kangaroo Island

Summary of Work carried out in Country Schools during 1966.—During the year, 3,462 children were examined by the Dentists employed in the School Health Branch.

Details of the total work done in the 31 schools visited are as follows:—

Number of visits for treatment	13,023
Fillings	19,662
Extractions	2,100
Other treatments	6,254

Children in primary grades were offered comprehensive treatment and an emergency service was again offered to pre-school children, secondary school children and adults.

In the schools where treatment was completed during the year, 87.2 per cent of the children who were found to need treatment received their parents' consent for the treatment to be given.

The average number of treatments per child required was as follows:—

Fillings	5.9
Extractions	0.6
Other treatments	1.9

Summary of Work carried out in Social Welfare Institutions.—A service was also given to the Department of Social Welfare Institutions, and Institutions visited during the school holidays were:—

Glandore Boys' Home	Seaforth Children's Home
Magill Boys' Training School	Struan Farm (via Naracoorte)
Lochiel Park Boys' Training Centre	Vaughan House

Details of work done in these institutions are as follows:—

Examinations	627
Fillings	887
Extractions	132
Other treatments	243
Visits for treatments	669

4. POLIOMYELITIS BRANCH

PRINCIPAL MEDICAL OFFICER—Dr. B. H. JEANES, M.B., B.S., D.P.H.

During 1966, the downward trend in the number of injections of Salk vaccine given was continued. There appeared to be four main reasons for this. Firstly, the continued freedom from cases of poliomyelitis in South Australia and the decreased prevalence of and publicity given to the disease in Australia and overseas has dimmed the sense of urgency which, up to a few years ago, stimulated people to seek vaccination. Secondly, in the first half of the year there was a shortage of Salk vaccine, and a forced halt in activity. Recovery from such episodes is always slow. In this instance it was necessary to wait while stocks of vaccine were imported from Canada and the United Kingdom. The announcement in June that the Commonwealth Government would make Sabin oral polio vaccine available to the States for general use was also in part responsible. The prospect of receiving immunization without injection seemed to have a deterrent effect on those people who, in other circumstances, would have come forward. Finally, after 10 years of using Salk vaccine, those people conscientiously seeking immunization are now largely covered, and those unprotected are either too young or are not sufficiently motivated to seek protection. It is hoped that the young will present in due course, but a great deal of effort and expense would be necessary to seek out and immunize the others.

MEDICAL INVESTIGATIONS

No cases of confirmed poliomyelitis occurred in South Australia in 1966. As the last confirmed case was in October, 1963, this is the third year in succession in which South Australia has been free from poliomyelitis. Two cases thought possibly to be due to poliomyelitis were investigated, but in neither case was the diagnosis seriously considered after a clinical examination, and laboratory tests proved negative.

Six cases were seen in which illness following administration of Salk vaccine was thought possibly due to the vaccine. In five cases skin testing failed to show that the vaccine was responsible, but in one instance a sensitivity to streptomycin was shown, and the patient, a nurse in a city hospital, was advised to avoid further contact with this drug.

ADMINISTRATION OF VACCINE

Salk vaccine continued to be the principal agent against poliomyelitis and an account of the groups using it is given below. A summary of the 108,882 injections given (134,752 in 1965), according to age, number of injections previously and the source from which the immunization was obtained, is given in Appendix 18 and a summary of the vaccine issued, used and wasted in Appendix 19.

1. *Poliomyelitis Services.*

During 1966, the scope of activities of the Poliomyelitis Services was widened, so that other immunizing responsibilities were undertaken. It is convenient to include these in this section.

A total of 10,263 injections were given (28,826 in 1965). A clinic operated daily at Norwood headquarters and there was an evening clinic once a week. There were also regular clinics at the Adelaide Children's Hospital and the Queen Victoria Maternity Hospital. Visits to institutions continued, but the vaccine shortage in the first half of the year and the fact that much of the backlog has now been caught up, meant that fewer visits were made and fewer injections given per visit. The possibility of a change over to oral vaccine before courses could be completed has meant that work in the various Public Service departments has been restricted, although a start was made in the latter half of the year to immunize staff of the Engineering and Water Supply Department. By the end of the year the first round of vaccinations had been completed and the second round begun.

The Poliomyelitis Services Branch also took over the immunization of the employees at the Group Laundry and Central Linen Service. Regular visits are now made to this establishment and a summary of the work done in 1966 is given below:—

	Number of Injections and Vaccinations
Poliomyelitis (1st, 2nd, 3rd and 4th)	283
Tetanus (1st, 2nd, 3rd and booster)	295
Smallpox (primary and revaccinations)	94
	672

There were reactions to tetanus toxoid in three cases, and a number of those receiving primary vaccination required treatment and time away from work, but no unduly severe reactions were seen. The vaccinations which employees were required to have as a condition of employment were accepted willingly, and the extremely pleasant working conditions in the Laundry are worthy of note.

Country visits continued to be co-ordinated with the Public Health Branch. On these visits all common immunizations were undertaken, and a summary of the work done is shown in the section "Control of Infectious Diseases" under Public Health Branch. An interesting feature is the relatively large number of smallpox vaccinations done and the increasing interest in vaccination against this disease. This is possibly stimulated by the number of migrants living in towns such as Iron Knob, but, in addition, many people are aware of the publicity which is given to smallpox from time to time and seek vaccination as they would against any other disease.

Although the number of immunizing injections given on each visit is declining, it will still be necessary to continue visits to outback areas in order to maintain a high immunization rate in those areas of the State in which immunization would otherwise be difficult to obtain.

Since June, 1966, immunization against whooping cough, diphtheria, tetanus and smallpox has been carried out at Norwood and later in the year the scheme was introduced to the Adelaide Children's Hospital clinic, although smallpox vaccination was not given at the latter. The idea proved successful. People may come in off the street without making an appointment and, because waiting time is at a minimum, the service is greatly appreciated by the public. Advice on immunization is also welcomed by many mothers who are unsure of what is necessary for the maintenance of immunity in older children and adults. A summary of the injections, other than poliomyelitis vaccine, given at the two centres follows:—

	Number of Injections and Vaccinations		
	Norwood	Adelaide Children's Hospital	Total
Triple antigen (1st, 2nd, 3rd and 4th)	137	75	212
Combined diphtheria and tetanus (1st, 2nd, 3rd and booster)	68	42	110
Tetanus toxoid (1st, 2nd, 3rd and booster)	206	123	329
Smallpox (primary and revaccination)	17	—	17
	428	240	668

In July, 1966, the Principal Medical Officer (Dr. B. H. Jeanes) attended a conference in Canberra on oral poliomyelitis vaccine, and later in the year a small supply of oral vaccine was obtained for use in cases in which Salk vaccine was medically contra-indicated. By the end of the year 20 doses had been used.

2. *Local Boards of Health*

Every local board continued to make facilities available for the people of its district to receive poliomyelitis immunization. In most instances, this was done directly, but in the case of some smaller boards arrangements were made for neighbouring boards to undertake the administration.

Although still accounting for the biggest number of injections, the total fell to 57,852 in 1966 (75,139 in 1965). Those people concerned with the poliomyelitis campaign through local boards have shown considerable patience at times when vaccine has been short, and orders have had to be cancelled, sometimes with very little notice. There have been instances in which a change in the dose of vaccine has caused some confusion, but steps taken to avoid this appear to be working satisfactorily.

A statement of the number of injections given by each local board is contained in Appendix 20.

3. *Private Doctors*

The number of privately practising medical practitioners who have indicated that they wish to use Salk vaccine appears to have stabilized. Because many of these doctors practise in groups, and the number in any group varies from time to time, figures are difficult to keep accurately, but at the end of 1966 approximately 400 doctors were involved. Following a survey of doctors in the Salisbury and Elizabeth area, the delivery service, previously confined to the inner metropolitan area, was extended. Almost all the doctors who were contacted preferred regular deliveries to having the vaccine posted. The extension of this service is working satisfactorily, and the total amount of work involved in delivering the vaccine is far less than that involved in making up and posting individual parcels. The private doctors constitute a growing force in poliomyelitis immunization and were the only group in which the total number of injections given in 1966 (27,810) was significantly greater than in 1965 (26,933). Generally speaking, wastage is decreasing and recording has improved, but there have been some instances in which considerable amounts of vaccine have had to be discarded, and similar instances in which careless recording will mean that problems may arise at a later date.

4. *Special Groups*

Although the total number of Salk injections given by special groups is not very high, their importance has been very considerable. A total of 3,957 injections were given in 1966 (3,867 in 1965). Many groups formerly active have not used vaccine at all during the year and it is felt that this is a result of the increasing public apathy towards poliomyelitis immunization. On the other hand, new centres such as the Flinders University Health Service and Chrysler Australia Limited have opened up, and centres such as the Adelaide University Health Service, Weapons Research Establishment Hospital at Woomera and other areas in the far outback have continued to make a valuable contribution to the overall position in the State. The operations of these groups are valuable as they reach sections of the population which would either not be able to receive immunization or would not seek it if it were not so readily available.

POSITION AT END OF 1966

The total of 2,160,284 Salk injections given in South Australia (2,051,342 at the end of 1965) includes 679,622 first doses, 662,250 second doses, 592,344 third doses and 226,068 fourth doses. This year, the number of fourth injections given exceeded either first, second or third doses. The percentage of the population protected against poliomyelitis is difficult to estimate, but in an effort to obtain a reasonably accurate picture, records from the Registrar of Births, Marriages and Deaths have been obtained and all deaths occurring since the introduction of Salk vaccine have been checked against our files and the cards of those people who have died in that period removed from the general files. It is hoped that when this work is completed, a reasonably accurate picture may be obtained. This, as may be imagined, has been a particularly prolonged and tedious task undertaken by the filing room staff, and the present indications are that the final results will be illuminating.

WORK PROJECTED FOR 1967

It is anticipated that 1967 will see the introduction of Sabin oral vaccine. At present there are some problems under consideration by various committees of the National Health and Medical Research Council and much will depend on the outcome of these meetings. A change over will involve a great deal of preparation which will possibly have to be made at the expense of immunizing activities. It is hoped that, if and when the oral vaccine is released, it will result in an increased public interest and thus obtain a higher immunizing rate than has been obtained up to the present.

The clinics will continue to operate and new outlets for vaccine will be sought, although until a final decision on oral vaccine is reached not a great deal could profitably be done. Country trips will continue to be co-ordinated with those of the Public Health Branch and it is hoped that a widened scope of activities will be obtained.

5. TUBERCULOSIS BRANCH

DIRECTOR OF TUBERCULOSIS—Dr. T. G. PAXON, M.D., M.R.C.P.

Last year, a review of tuberculosis statistics since 1945 was presented and it was pointed out that in 1960 it was not anticipated that within the next five years the numbers of new pulmonary cases would have fallen by 50 per cent of the 1960 figure. The trend still continues and Appendix 21 shows the figures from 1960 to date. Non-pulmonary forms of the disease also show a drop from 29 in 1965 to 25 in 1966.

In 1965, 37 per cent of the new pulmonary cases occurred in women. Last year, due to a diminution in the number of new cases in men, the figure rose to 45 per cent.

Appendix 22 shows the age, sex and state of the disease in cases notified in 1966. The age period 40-55 years still contains the highest percentage of new cases.

Appendix 23 shows that the number of reactivated cases was high—14 compared with six in 1965.

Appendices 24 and 25 show the sources of notifications.

Migrants.—Twenty three per cent of the new cases occurred in migrants. Of these, 13 per cent were in non-assisted migrants; 43.3 per cent were in persons from the United Kingdom. Appendix 26 shows details.

Mortality.—(Appendix 27). Thirteen deaths occurred last year, an increase of seven on the previous year. It is difficult to define with accuracy whether a death is in point of fact due to tuberculosis. Tuberculosis deaths may be classified under four headings:—

(1) Deaths in the very elderly or indigent whose disease is diagnosed post mortem or before treatment can be started.

(2) Deaths in the acute fulminating forms of the disease.

(3) Deaths from undiagnosed miliary forms.

(4) Deaths occurring in patients with active tuberculosis but who were, at the time of death, also suffering from other conditions, for example, heart failure.

Deaths in group (4) may not be due entirely to tuberculosis but are included and so that total figures may be inflated.

Tuberculosis Allowance.—(Appendix 28). Persons in receipt of the tuberculosis allowance during the year numbered 78, which was 19 fewer than in 1965.

Mass X-rays.—(Appendix 29). The yield of active cases from mass surveys was the lowest on record, 0.14 per thousand in the city and 0.10 per thousand in the country.

In accordance with the Commonwealth recommendations, the tempo of conducting the surveys has been reduced and a total of 82,345 persons were X-rayed as against 145,780 in 1965.

The work of the Static X-ray Unit in Austin Street is also shown.

The most important group, those found with evidence of inactive disease at previous surveys and who are requested to have annual films, showed active disease at the rate of one in 280. Last year the figure was one in 222.

Appendix 30 shows the results of persons tuberculin tested who were not contacts. In the age group 5-9 years, 13,000 children were tested; only 0.7 per cent of them were positive reactors, as against 1.5 per cent last year. In the age group 10-14 years, 12,000 were tested; the overall rate was 2.3 per cent of positive reactors, as against 3.9 per cent last year.

Appendix 31 shows Chest Clinic and Contact Clinic attendances for 1966.

6. SUMMARY AND CONCLUSIONS

The activities of the Department have been reported on in detail and each Branch has recorded matters of interest and importance.

The incidence of infective hepatitis remains high and gives some cause for concern.

Following changes in legislation, 1966 was the first full year in which figures are available for the notification of gonorrhoea and syphilis; consequently, it will not be possible to determine the incidence of these diseases for several years.

No notification of poliomyelitis was received for the third successive year.

It is also pleasing to note that the number of cases of tuberculosis notified continues to decline.

Many local boards of health have continued to show an interest in installation of common effluent drains in their areas. In addition to the supervision of numerous schemes in the near metropolitan areas of Tea Tree Gully, Noarlunga and Mitcham, several country towns were surveyed and schemes designed by the staff of the Department.

The Occupational Health Section continues to provide a valuable service by assessing many health aspects of occupation and occupational environment, and advising on improvements in facilities and practices.

During the year, positive steps were taken towards the commencement of the training of girls along the lines of the New Zealand Dental Nurse Scheme to work in the School Health Branch. An officer was appointed to undertake training in New Zealand to enable a training school to be set up to commence training early in 1967. The ready assistance and advice of the New Zealand Government and officers of the New Zealand Health Service have been greatly appreciated.

The Central Board of Health desires to express its thanks to the local boards of health, its own officers, and staff of the Department of Public Health for their efforts and continued co-operation throughout the year. The continued valued assistance of other Government Departments and the Institute of Medical and Veterinary Science is also appreciated.

To you, Sir, we also offer our thanks for your interest and support during the year.

P. S. WOODRUFF, Chairman

G. H. McQUEEN
J. B. CLELAND
C. J. H. WILLIAMSON,
A. BERTRAM COX
} Members

R. W. LAVER, Secretary

Adelaide, 31st October, 1967

APPENDIX 1—INFANT DEATHS : MAIN CAUSES, SOUTH AUSTRALIA 1962 TO 1966

Cause	1962	1963	1964	1965	1966
	No.	No.	No.	No.	No.
Diarrhoea	7	15	9	12	10
Congenital Malformations	76	91	79	82	84
Prematurity	77	72	82	67	57
Injury at birth	56	41	38	35	41
Post-natal Asphyxia and Atelectasis	39	36	58	38	20
Other diseases peculiar to early infancy	52	63	41	73	74
Cerebro-spinal Meningitis	—	1	2	—	2
Meningitis	5	—	3	4	2
Whooping Cough	1	1	1	—	1
Pneumonia	47	42	37	39	28
Hernia and Intestinal obstruction	4	6	6	4	1
External causes	11	9	14	14	10
All other causes	34	22	27	17	26
Total	409	399	397	385	356

APPENDIX 2—BIRTHS, MARRIAGES AND DEATHS : NUMBERS REGISTERED AND RATES 1962 TO 1966

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*b*)
1962	21,361	21·51	7,021	7·07	8,232	8·29	409	19·15
1963	21,367	21·02	7,302	7·19	8,201	8·07	399	18·67
1964	20,866	20·00	7,765	7·44	8,906	8·54	397	19·03
1965	20,891	19·55	8,680	8·12	8,788	8·22	385	18·43
1966	20,319	18·63(*p*)	9,051	8·30(*p*)	9,323	8·55(*p*)	356	17·52

(*a*) Per 1,000 of Mean Population. (*b*) Per 1,000 Live Births registered. (*p*) Partly estimated.

APPENDIX 3—INFECTIOUS AND NOTIFIABLE DISEASES, NOTIFIED TO THE CENTRAL BOARD OF HEALTH

Infectious Diseases	Cases			Deaths		
	1964	1965	1966	1964	1965	1966
Acute infective encephalitis	2	1	2	3	2	—
Amoebiasis	1	—	—	—	1	—
Ancylostamiasis	2	—	—	—	—	—
Diphtheria	—	1	—	—	—	—
Diarrhoea, infantile infective	12	13	2	—	—	—
Dysentery, Bacillary	73	178	135	—	—	—
Leptospirosis	2	1	1	—	—	—
Malaria—relapses	—	3	1	—	—	—
Meningococcal infection	5	4	6	5	—	1
Ornithosis	1	—	—	—	—	—
Paratyphoid fever	1	3	—	—	—	—
Puerperal pyrexia	2	4	1	—	—	—
Salmonella infection	120	127	120	—	—	—
Scarlet fever	202	127	57	—	—	—
Trachoma	42	—	1	—	—	—
Typhoid fever	4	1	1	—	—	—
Tuberculosis, pulmonary	147	126	106	9	6	12
Tuberculosis, other forms	30	30	25	1	1	1

Notifiable Diseases	Cases			Deaths		
	1964	1965	1966	1964	1965	1966
Acute rheumatism	—	1	8	—	—	—
Brucellosis	2	—	1	—	—	—
Erythema Nodosum	3	3	3	—	—	—
Encephalitis, following another disease	1	5	7	—	—	—
Gonorrhoea	—	4	256	—	—	—
Hydatid disease	—	1	—	—	—	—
Infective hepatitis	289	414	978	2	2	—
Ophthalmia	—	2	3	—	—	—
Rubella	664	649	226	—	—	—
Syphilis	—	—	7	—	—	—
Tetanus	—	6	—	—	3	—

APPENDIX 4—IMMUNIZATION CARRIED OUT BY LOCAL BOARDS OF HEALTH

Courses	Triple Antigen		Combined Diphtheria and Tetanus Toxoid		Tetanus Toxoid	
	1965	1966	1965	1966	1965	1966
Complete	5,385	7,139	1,365	2,712	1,869	1,437
Incomplete	3,985	3,913	1,367	2,416	1,091	1,053
Refresher	2,873	2,673	7,831	7,388	4,087	2,587
Total	12,243	13,725	10,563	12,516	7,047	5,077

For details of Poliomyelitis immunization by Local Boards of Health, see Appendix 20

APPENDIX 5—IMMUNIZATION CARRIED OUT BY DEPARTMENT OF PUBLIC HEALTH (IN OUTBACK AREAS)

	Polio-myelitis	C.D.T.	Triple Antigen	Tetanus Toxoid	Smallpox	Total
Outside Local Government Areas—						
Iron Baron, Iron Knob	130	45	11	57	147	390
West Coast	365	318	46	245	127	1,101
Broken Hill Line	124	33	13	39	—	209
Far North	80	52	10	34	10	186
Andamooka, Coober Pedy	51	56	—	14	24	145
Total	750	504	80	389	308	2,031
At Hawker (District of Kanyaka)	4	46	—	33	16	99

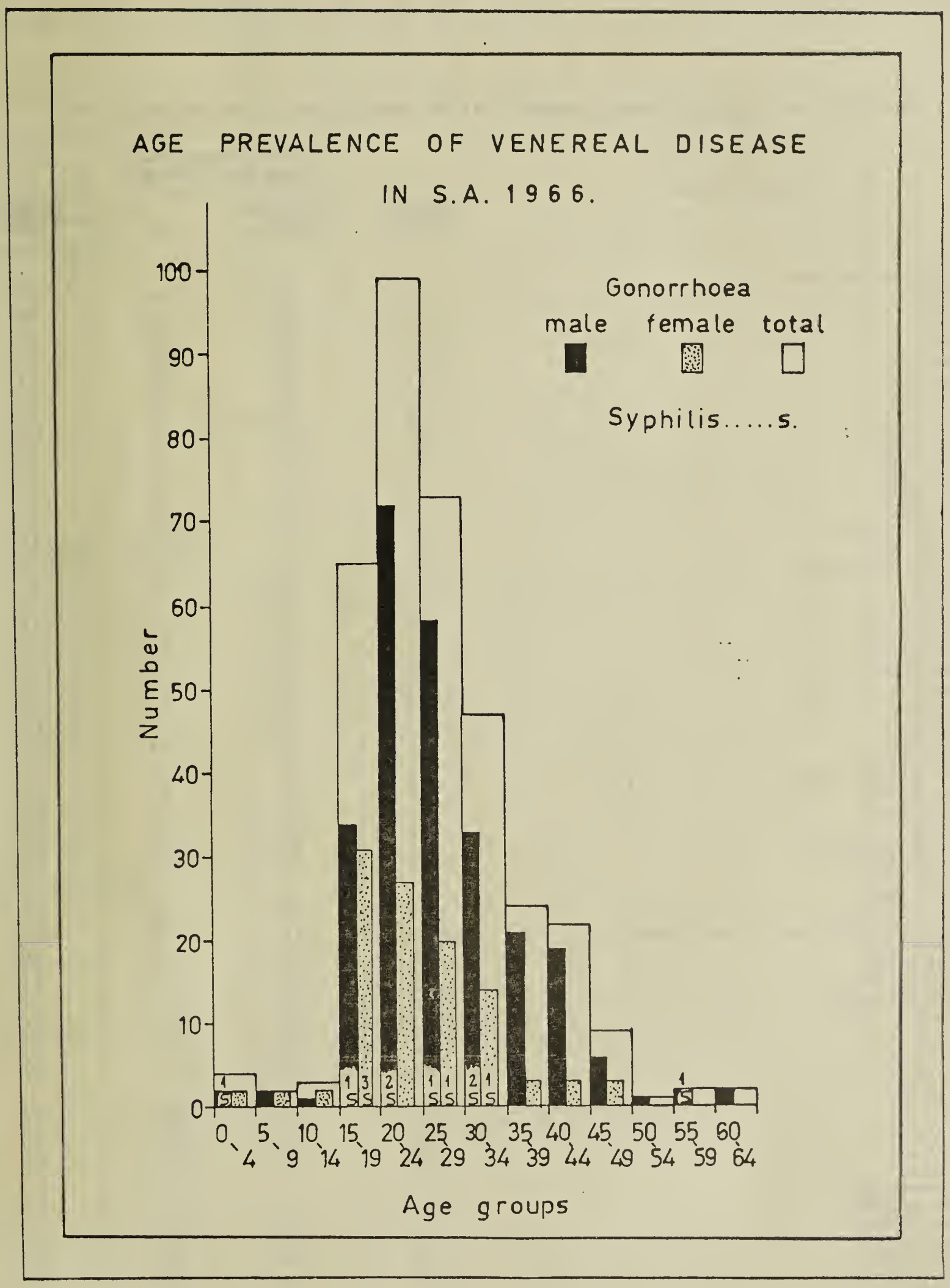
APPENDIX 6—STATISTICAL INFORMATION RELATING TO GONORRHOEA AND SYPHILIS

	Males		Females	
	No.	Per Cent	No.	Per Cent
Suffering from—				
Gonorrhoea	247	67.0	108	29.5
Syphilis	8	2.3	5	1.2
Combined Gonorrhoea and Syphilis	1	0.3	1	0.3
Single and suffering from Gonorrhoea	186	50.0	73	17.3
Married and suffering from Gonorrhoea	61	16.7	35	9.8
Single and suffering from Syphilis	7	11.9	3	0.9
Married and suffering from Syphilis	1	0.3	2	0.6
Single and suffering from combined Gonorrhoea and Syphilis	1	0.3	1	0.3
Married and probably infected by spouse with Gonorrhoea	2	0.6	18	5.4
Married and probably infected by spouse with Syphilis	—	—	1	0.3

APPENDIX 7—SOURCES OF GONORRHOEA AND SYPHILIS INFORMATION

Sources	Gonorrhoea	Syphilis	Total	Per Cent
General Practitioners—				
Males infected	134	2		
Females infected	43	2	181	49.2
Venereal Disease Clinics—				
Males infected	84	3		
Females infected	30	1	118	32.1
Hospitals (including antenatal clinics and outpatient departments)—				
Males infected	7	3		
Females infected	41	2	53	14.4
Armed Services—				
Males infected	9	—	9	2.4
Prisons Department—				
Males infected	4	—	4	1.1
Interstate—				
Males infected	1	—		
Females infected	2	—	3	0.8
Totals	355	13	368	100.0

APPENDIX 8—


AGE PREVALENCE OF VENEREAL DISEASE
IN S.A. 1966.
Gonorrhoea
male female total
Syphilis.....s.
Number
100
90
80
70
60
50
40
30
20
10
0
0 4 5 9 10 14 15 19 20 24 25 29 30 34 35 39 40 44 45 49 50 54 55 59 60 64
Age groups

APPENDIX 9—NUMBER OF LICENCES AND REGISTRATIONS GRANTED UNDER RADIOACTIVE SUBSTANCES AND IRRADIATING APPARATUS REGULATIONS

Type of Application	1962	1963	1964	1965	1966
	No.	No.	No.	No.	No.
Registration of apparatus—					
First unit	7	322	285	329	341
Additional units	48	112	149	167	186
Use of apparatus	33	380	234	157	118
Sale, etc. of apparatus	1	2	4	5	5
Use of radioisotopes	54	118	163	220	254
Sale, etc. of radioisotopes	1	6	4	3	4

APPENDIX 10—AIR POLLUTION—DEPOSIT GAUGE RESULTS, JULY, 1965 TO JUNE, 1966

Location of Gauge	Tons Per Square Mile Average Rate Per Month			
	Insoluble Matter	Combustible Matter	Ash	Soluble Matter
Adelaide Metropolitan Area—				
Adelaide	14.4	2.8	10.9	4.5
Beverley	12.3	2.8	9.5	4.6
Beverley	11.3	2.4	9.6	5.2
Birkenhead	14.2	3.5	10.7	6.7
Birkenhead	19.5	5.9	12.3	7.7
Birkenhead	18.4	3.2	15.0	6.3
Birkenhead	11.5	2.7	7.8	5.2
Black Forest	7.1	2.2	4.9	4.3
Black Forest	10.4	2.6	7.7	6.5
Black Forest	8.2	2.3	5.9	4.6
Black Forest	9.5	2.1	7.3	4.5
Black Forest	7.1	2.5	4.7	3.9
Black Forest	7.5	1.6	4.0	3.7
Black Forest	6.9	2.0	4.7	4.8
Clarence Gardens	8.1	2.8	8.8	4.0
Clarence Park	9.4	1.2	6.7	4.3
Colonel Light Gardens	10.3	2.1	7.8	7.9
Findon	9.2	1.9	7.3	4.1
Flinders Park	9.3	2.1	7.2	3.6
Hammersmith	7.4	2.0	4.9	4.0
Hammersmith	8.2	2.0	6.2	5.8
Hammersmith	9.0	2.7	6.2	4.1
Hammersmith	10.3	4.4	5.9	7.1
Islington Sewage Farm	10.6	2.9	7.7	5.4
Kent Town	10.3	2.4	7.9	3.9
Largs Bay	15.4	3.3	11.9	8.3
Linden Park	5.7	1.9	4.4	3.4
Mansfield Park	10.0	2.1	7.4	6.7
North Adelaide, Lower	8.8	2.0	4.9	4.0
North Adelaide	6.0	2.2	4.7	4.9
Port Adelaide	10.6	2.7	7.9	5.3
Prospect	7.1	1.9	5.3	4.3
Wayville Showgrounds	14.5	3.5	10.8	5.7
Woodville South	12.6	2.5	11.0	4.4
Port Stanvac Area—				
Christies Beach	15.4	5.2	9.6	8.8
Hallets Cove	5.7	1.7	3.9	4.7
Morphett Vale (four months—gauge removed)	1.5	1.6	3.0	4.5
Morphett Vale	8.0	2.5	5.3	4.0
Morphett Vale	7.2	2.3	4.7	4.3
O'Halloran Hill	7.2	2.5	4.6	5.4
O'Sullivans Beach	8.5	2.8	5.5	6.5
Reynella	9.1	4.0	5.0	6.6
Reynella	4.9	2.0	2.9	4.9
Reynella	6.3	2.1	4.1	3.9
Reynella	6.4	2.0	4.3	4.1
Angaston Area—				
Angaston	29.1	6.5	22.6	4.0
Angaston	16.3	4.1	12.1	4.5
Angaston	20.2	5.0	15.1	5.1
Angaston	24.8	5.9	18.8	6.7
Angaston	13.0	3.5	12.0	4.1
Mount Gambier Area—				
Mount Gambier	10.7	5.3	5.4	6.0
Mount Gambier	8.6	3.9	4.6	6.9
Mount Gambier	5.5	2.6	2.9	5.7
Mount Gambier	8.5	4.0	5.3	7.2
Mount Gambier	10.3	4.6	6.5	6.6
Salisbury Area—				
Parafield Aerodrome	12.6	2.4	10.1	3.6
Salisbury	8.6	2.1	6.4	3.1
Salisbury	8.5	1.8	6.5	2.8
Salisbury	10.9	2.5	8.3	3.5

APPENDIX 11—AIR POLLUTION—SULPHUR DIOXIDE CONCENTRATIONS, 1966

Site		Parts per One Hundred Million											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Adelaide Metropolitan Area—													
Thebarton	Av.	1.7	0.9	1.2	1.0	0.8	0.6	0.6	0.6	0.7	0.8	0.8	0.5
	H.D.R.	3.1	2.2	3.9	2.0	1.8	2.6	1.1	1.1	2.3	2.6	1.7	1.2
Fort Largs	Av.	1.2	0.9	0.9	1.0	0.6	0.6	0.5	0.3	0.4	0.5	0.7	1.2
	H.D.R.	2.9	2.5	2.8	2.4	1.4	1.8	1.3	1.8	1.8	1.7	2.4	3.8
Woodville North	Av.	1.2	1.4	1.6	1.8	0.8	0.8	0.4	0.5	0.5	0.7	0.5	0.5
	H.D.R.	3.1	5.5	4.3	12.3	1.7	2.3	0.9	1.2	1.0	1.8	1.0	1.3
Richmond	Av.	1.5	1.3	1.3	1.1	0.6	0.6	0.4	0.2	0.3	0.5	1.1	0.9
	H.D.R.	1.9	2.4	4.3	2.8	1.9	2.0	1.2	0.8	1.0	2.2	5.2	4.5
Birkenhead	Av.	2.0	1.3	1.6	0.9	0.9	0.8	0.4	0.4	0.3	0.3	0.8	1.0
	H.D.R.	6.5	2.7	5.6	3.8	3.1	2.3	2.6	1.1	1.1	1.3	3.5	4.6
Rosewater	Av.	3.6	14.5	5.7	4.9	3.0	2.6	2.0	2.3	0.9	1.5	0.8	0.4
	H.D.R.	10.2	20.7	12.7	10.0	5.5	7.5	5.7	4.8	5.4	7.0	2.4	2.1
West Terrace	Av.	—	—	—	—	—	1.6	1.2	0.8	1.0	1.0	1.4	0.9
	H.D.R.	—	—	—	—	—	3.0	2.0	1.3	1.8	1.9	2.9	2.5
Hindmarsh	Av.	—	—	—	—	—	—	0.2	0.3	0.3	0.3	1.0	1.1
	H.D.R.	—	—	—	—	—	—	0.7	0.9	0.8	1.4	4.1	3.3
Country Areas—													
Port Augusta West	Av.	—	—	—	—	1.1	0.6	0.7	0.6	0.8	1.2	2.6	1.9
	H.D.R.	—	—	—	—	2.6	1.1	2.1	1.0	3.0	4.6	5.0	6.6
Port Augusta	Av.	3.2	2.6	1.8	1.9	1.3	0.7	0.5	0.5	0.8	1.2	2.4	1.8
	H.D.R.	5.5	7.9	4.1	6.4	2.4	3.4	1.8	1.2	2.3	3.9	5.5	3.9
Port Pirie	Av.	1.9	0.5	1.9	2.5	4.5	2.9	4.1	0.7	0.6	1.8	1.7	1.3
	H.D.R.	3.6	4.2	26.2	20.4	16.1	8.9	27.3	4.2	3.1	10.2	6.8	5.4

Av. = Monthly Average. H.D.R. = Highest Daily Readings.

APPENDIX 12—AIR POLLUTION—SMOKE DENSITIES 1966

Site		COH units per 1,000 linear feet											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Adelaide Metropolitan Area—													
Thebarton	Av.	0.1	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.2
	H.D.R.	0.3	0.3	0.4	0.9	0.4	0.6	0.4	0.4	0.3	0.5	0.4	0.3
Fort Largs	Av.	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1
	H.D.R.	0.2	0.2	0.3	0.4	0.4	0.6	0.4	0.4	0.3	0.4	0.4	0.2
Woodville North	Av.	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.2	0.1
	H.D.R.	0.3	0.3	0.4	0.4	0.4	0.7	0.5	0.6	0.3	0.4	0.3	0.3
Richmond	Av.	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1
	H.D.R.	0.3	0.3	0.4	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.3	0.3
Birkenhead	Av.	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.1
	H.D.R.	0.4	0.3	0.5	0.4	0.5	0.8	0.4	0.6	0.4	0.4	0.5	0.3
Rosewater	Av.	Less than 0.1	Less than 0.1	Less than 0.1	Less than 0.1	Less than 0.1	Less than 0.1	Less than 0.1	Less than 0.1	0.1	0.1	0.1	Less than 0.1
	H.D.R.	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2
West Terrace	Av.	—	—	—	—	—	0.4	0.3	0.3	0.3	0.2	0.2	0.2
	H.D.R.	—	—	—	—	—	0.7	0.6	0.5	0.4	0.5	0.4	0.3
Hindmarsh	Av.	—	—	—	—	—	—	0.4	0.4	0.3	0.3	0.2	0.1
	H.D.R.	—	—	—	—	—	—	0.9	0.6	0.6	0.5	0.4	0.5
Country Areas—													
Port Augusta West	Av.	—	—	—	—	0.1	0.1	0.1	0.1	0.1	Less than 0.1	0.1	Less than 0.1
	H.D.R.	—	—	—	—	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Port Augusta	Av.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Less than 0.1	Less than 0.1
	H.D.R.	0.2	0.2	0.4	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1
Port Pirie	Av.	Less than 0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	Less than 0.1
	H.D.R.	0.3	0.2	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.1

Av. = Average. H.D.R. = Highest Daily Reading.

APPENDIX 13—CHILDREN EXAMINED IN EDUCATION DEPARTMENT SCHOOLS

	1964	1965	1966		
			Metropolitan	Country	Total
Schools visited	341	409	159	208	367
Children examined	81,261	80,156	60,316	28,724	89,040
Defects found—					
Vision (excluding spectacles)	6,620	5,974	4,559	2,172	6,731
Wearing spectacles	6,415	5,857	1,667	4,806	6,473
Hearing	2,497	2,281	1,920	928	2,848
Nose and throat	984	1,030	775	322	1,097
Heart	549	585	584	353	937
Skin	1,472	848	1,049	430	1,479
Lungs	200	336	164	88	252
Epilepsy	119	89	73	16	89
Allergies	4,020	3,386	2,352	1,169	3,521
Others, including postural defects, colour blindness, enuresis	7,947	8,913	9,428	4,455	13,883
Teeth—seen by medical officers only and excluding children under dental treatment	8,851	13,097	8,879	6,592	15,471
Total defects	39,674	42,396	31,450	21,331	52,781

APPENDIX 14—DEFECTS PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Heart	Epilepsy	Allergies	Teeth*
1960	706	233	104	57	11	476	2,059
1961	571	282	119	51	11	475	1,912
1962	615	211	113	52	11	398	1,687
1963	730	306	140	47	13	537	1,500
1964	817	308	121	68	15	496	1,093
1965	723	284	129	73	11	423	1,637
1966	757	320	123	105	10	395	1,738

* This figure does not represent the total decay rate. These were children examined by medical officers and found to have sufficient decay present to warrant the issuing of a dental notice. Children already under private dental supervision and children examined by departmental dental officers are not included.

APPENDIX 15—INFECTIONS IN SCHOOL CHILDREN—NUMBERS OF COMMUNICABLE DISEASES REPORTED TO TEACHERS IN STATE SCHOOLS

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio-myelitis	Infective Hepatitis	Other Conditions
					COMMUNICABLE DISEASES					
1962	—	171	4,494	686	91	1,804	962	2	107	49
1963	—	172	1,444	826	218	2,607	4,750	—	59	99
1964	1	200	2,488	985	54	1,997	1,618	—	85	85
1965	2	122	1,283	639	27	1,737	892	—	126	118
1966	—	113	1,391	360	108	1,566	1,495	—	361	88
					COMMUNICABLE DISEASES PER 10,000 CHILDREN ENROLLED					
1962	—	9.3	244.0	37.3	4.9	98.0	52.3	—	5.8	2.7
1963	—	9.1	73.9	43.5	11.5	137.2	250.0	—	3.1	5.2
1964	—	10.0	124.8	49.2	2.7	99.8	80.9	—	4.3	4.3
1965	—	5.8	61.0	30.4	1.3	82.7	42.5	—	6.0	5.6
1966	—	5.1	63.2	16.4	4.9	71.2	67.9	—	16.4	4.0

APPENDIX 16—ATTENDANCES AT THE DEAFNESS GUIDANCE CLINIC

	New Cases			Retests		
	Male	Female	Total	Male	Female	Total
Pre-school—						
Metropolitan	38	30	68	15	1	16
Country	7	3	10	2	2	4
Primary School—						
Metropolitan	567	441	1,008	661	475	1,136
Country	129	60	189	103	53	156
Secondary School—						
Metropolitan	117	52	169	154	86	240
Country	24	13	37	19	15	34
Government Departments and others	52	26	78	15	7	22
Total	934	625	1,559	969	639	1,608

APPENDIX 17—DISPOSAL AFTER ATTENDANCE AT THE DEAFNESS GUIDANCE CLINIC

	New Cases	Retests
Referred to Family Doctor	687	418
Referred to Specialists or Hospitals	116	98
Returning for further testing	352	761
Discharged	404	331

APPENDIX 18—POLIOMYELITIS IMMUNIZATION INJECTIONS GIVEN IN THE YEAR ENDED 31ST DECEMBER, 1966
(In applicants' year of birth and in first, second, third and fourth injections)

Year of Birth	Poliomyelitis Services				Local Boards of Health				Hospitals and other Authorities				Private Doctors				Total			
	1st	2nd	3rd	4th+	1st	2nd	3rd	4th+	1st	2nd	3rd	4th+	1st	2nd	3rd	4th+	1st	2nd	3rd	4th+
1966	254	165	—	—	2,762	1,784	—	—	55	30	—	—	1,974	1,430	—	—	5,045	3,409	—	—
1965	831	875	436	2	6,789	7,043	3,509	7	175	170	67	1	3,862	4,040	2,423	13	11,657	12,128	6,435	23
1964	177	207	663	264	818	1,145	4,701	2,032	36	52	139	39	363	422	2,202	1,134	1,394	1,826	7,705	3,469
1963	113	129	246	554	357	429	1,066	4,310	20	15	48	122	183	187	438	1,258	673	760	1,798	6,244
1962	89	100	170	251	267	299	539	1,524	14	13	28	35	129	137	221	438	499	549	958	2,248
1961	81	83	102	210	207	207	371	843	14	10	16	34	96	100	154	298	398	400	643	1,385
1960	53	69	114	172	242	236	374	812	3	5	15	31	77	69	107	287	375	379	610	1,302
1959	63	65	102	168	127	130	311	637	6	9	10	30	53	56	76	159	249	260	499	994
1958	27	40	62	150	103	105	213	509	3	7	8	26	28	30	54	133	161	182	337	818
1957	32	30	70	142	78	66	141	451	5	4	5	13	22	27	40	110	137	127	256	716
1956	29	30	55	138	56	55	137	439	4	3	8	18	21	24	38	79	110	112	238	674
1955	20	25	44	140	71	63	100	322	3	5	4	15	15	17	29	75	109	110	177	552
1954	24	23	40	113	57	57	105	320	4	4	2	12	20	18	22	77	105	102	169	522
1953	31	31	42	97	65	51	78	388	3	2	2	6	13	7	14	40	112	91	136	531
1952	25	30	40	119	60	62	76	351	1	2	3	15	17	13	28	40	103	107	147	525
1951	24	30	36	82	55	54	59	312	1	1	—	3	4	4	8	36	84	89	103	433
1950	14	21	23	77	23	23	34	195	4	4	8	12	10	7	5	32	51	55	70	316
1949	24	23	22	86	12	17	18	103	7	9	37	55	2	3	4	35	45	52	81	279
1948	30	25	21	113	10	9	8	84	13	15	57	403	4	5	7	32	57	54	93	632
1947	33	25	19	127	12	7	11	71	24	27	28	217	5	7	6	22	74	66	64	437
1946	36	19	20	139	10	9	22	62	41	39	25	90	10	7	7	31	97	74	74	322
1945	140	113	31	320	15	14	16	87	29	26	29	59	7	6	6	56	191	159	82	522
1944	50	38	26	149	21	18	27	90	22	23	23	56	11	10	13	45	104	89	89	340
1943	53	32	34	148	35	30	37	123	14	18	10	27	7	7	21	91	109	87	102	389
1942	51	47	52	119	48	44	70	177	10	11	12	36	20	31	40	77	129	133	174	409
1941	88	73	71	145	42	57	92	202	15	17	15	24	42	57	75	93	187	204	253	464
1940	77	63	83	151	91	88	135	202	14	17	17	29	53	58	67	118	235	226	302	500
1939	86	64	79	129	65	70	107	206	14	13	11	19	38	38	62	103	203	185	259	457
1938	64	56	65	113	68	70	89	248	12	14	12	14	43	30	61	98	187	170	227	473
1937	72	59	73	84	77	78	103	212	9	15	7	16	33	32	49	85	191	184	232	397
1936	65	49	55	103	57	60	70	202	4	7	15	15	14	27	55	89	140	143	195	409
1935	76	54	65	92	46	58	82	176	5	12	10	8	24	22	44	71	151	146	201	347
1934	65	37	62	83	52	48	76	143	7	13	8	19	13	17	41	68	137	115	187	313
1933	63	38	44	68	25	39	61	140	4	7	5	8	15	22	39	72	107	106	149	288
1932	61	40	46	87	38	39	54	155	8	10	11	10	13	14	26	63	120	103	137	315
1931	41	33	43	90	38	34	51	136	3	8	6	13	17	16	32	32	99	91	132	271
1930	60	31	60	79	44	41	61	136	3	8	13	17	10	16	21	54	117	96	155	286
1929	73	27	51	98	15	16	40	114	4	5	8	13	12	18	29	44	104	66	128	269
1928	62	44	40	97	39	36	47	105	6	9	9	10	16	23	33	52	123	112	129	264
1927	65	29	60	87	29	32	50	101	2	6	3	10	10	8	18	44	106	75	131	242
1926	69	24	48	98	26	32	39	101	6	10	9	5	7	7	18	50	108	73	114	254
1925	53	28	39	98	20	21	43	98	2	6	6	6	5	6	25	33	80	61	123	235
1924	49	23	46	91	16	20	45	102	3	10	6	4	6	5	11	48	74	58	108	245
1923	41	26	30	67	13	12	33	67	2	5	4	10	10	9	13	40	66	52	80	184
1922	51	22	41	86	16	16	30	66	2	5	6	12	5	5	14	36	74	48	91	200
1921	45	27	33	77	8	9	28	64	3	—	4	7	10	11	15	23	66	47	80	171
1920	71	25	39	68	9	13	20	64	2	4	5	9	3	4	14	26	85	46	78	167
1919	34	15	36	70	15	20	19	37	1	3	6	4	4	2	10	20	54	40	71	131
1918	37	26	31	59	6	10	17	42	3	3	7	6	5	5	9	21	51	44	64	128
1917	53	19	26	63	6	8	8	31	1	4	3	3	3	6	10	17	63	37	47	114
1916	48	20	28	60	5	6	12	38	2	2	1	5	3	7	9	20	58	35	50	123
1915	49	16	21	60	2	2	11	36	1	3	4	1	3	6	8	16	55	27	44	113
1914	61	27	38	60	5	8	17	35	2	3	5	3	2	4	10	16	70	42	70	114
1913	54	22	34	61	8	5	26	34	—	—	—	4	4	1	7	16	66	28	67	115
1912	59	20	41	52	8	7	28	52	1	1	2	5	7	7	12	22	75	35	83	131
1911	50	14	39	58	4	4	16	39	1	—	—	2	7	8	11	26	62	26	66	125
1910+ ..	362	137	279	552	58	66	132	321	12	26	43	31	42	36	87	175	474	265	541	1,079
Total	4,508	3,463	4,226	7,066	13,251	12,982	13,665	17,954	665	750	845	1,697	7,432	7,191	6,898	6,289	25,856	24,386	25,634	33,006

APPENDIX 19—USAGE AND WASTAGE OF SALK VACCINE IN SOUTH AUSTRALIA IN 1966 BY VARIOUS AGENCIES

	Poliomyelitis Services	Local Boards of Health	Special Groups	Metropolitan Doctors	Country Doctors
Doses Issued—					
Single pack	14,896	26,492	3,476	*28,695	7,175
Multiple pack	5,170	37,540	590	—	130
Total	20,066	64,032	4,066	*28,695	7,305
Injections given	19,263	57,852	3,957	21,947	5,863
Doses Wasted or Unaccounted For—					
Single pack	626	2,230	69	6,784	1,406
Multiple pack	184	3,950	40	—	36
Total	810	6,180	109	6,784	1,442
Doses Gained—					
Single pack	7	75	—	—	—
Multiple pack	—	270	—	—	—
Total	7	340	—	—	—

* Includes 6,139 doses reissued by Poliomyelitis Services.

APPENDIX 20—POLIOMYELITIS INJECTIONS GIVEN BY LOCAL BOARDS OF HEALTH

	Injections given	
	1966	1965
METROPOLITAN		
Adelaide	357	481
Brighton	523	973
Colonel Light Gardens	—	12
East Torrens County Board	3,099	5,993
Enfield	3,242	4,232
Glenelg	364	470
Henley and Grange	668	741
Hindmarsh	552	652
Marion	3,156	4,492
Mitcham	873	1,510
Port Adelaide	1,666	2,006
Prospect	732	2,006
Thebarton	712	585
Unley	1,057	1,502
Walkerville	122	143
West Torrens	1,286	1,779
Woodville	6,083	7,126
COUNTRY		
Angaston	389	510
Balaklava	281	353
Barmera	224	464
Barossa	34	22
Beachport—Done at Millicent	—	—
Berri	174	321
Blyth	75	53
Browns Well—Done at Loxton	—	—
Burra	211	269
Bute—Done at Kadina	—	—
Carrieton—Done at Orroroo	—	—
Clare District—Done at Town of Clare	—	—
Clare Town	125	153
Cleve	411	554
Clinton—Done at Yorke Peninsula	—	—
Coonalpyn Downs	264	245
Crystal Brook	155	130
Dudley	38	51
East Murray—Done by Loxton and Karoonda	—	—
East Torrens Local	184	179
Elliston	84	46
Encounter Bay	106	95
Eudunda	154	185
Franklin Harbour	82	145
Freeling	61	219
Gawler	233	562
Georgetown—Done at Gladstone	—	—
Gladstone	116	210
Gumeracha	—	667
Hallett	150	114
Hawker	96	81
Jamestown District—Done by Jamestown Town	—	—
Jamestown Town	134	218
Kadina	284	321
Kanyaka—Done by Quorn	—	—
Kapunda District	130	165
Kapunda Town—Done by Kapunda District	—	—
Karoonda	134	155
Kimba	194	184
Kingscote	366	373
Lacepede	153	163
Lameroo	277	216
Laura	65	93
Le Hunte	200	148
Lincoln	251	262
Loxton	345	293
Lucindale	143	155
Maitland—Done by Yorke Peninsula	—	—
Mallala	133	144
Mannum	298	365
Marne	67	56
Meadows	126	160
Meningie	446	690
Millicent	996	750
Minlaton	—	175
Mobilong—Done by Murray Bridge	—	—
Moonta	99	94
Morgan	64	155
Mount Barker	41	105
Mount Gambier District—Done by Mount Gambier Town	—	—
Mount Gambier Town	2,057	1,996
Mount Pleasant	129	146
Mudla Wirra	27	60
Munno Para	988	1,118
Murat Bay	248	280
Murray Bridge	887	1,091
Naracoorte District—Done by Naracoorte Town	—	—
Naracoorte Town	700	889
Noarlunga	1,252	1,354
Onkaparinga	407	451
Orroroo	141	163
Owen	119	125
Paringa—Done by Renmark	—	—

APPENDIX 17—POLIOMYELITIS INJECTIONS GIVEN BY LOCAL BOARDS OF HEALTH—*continued*

	Injections given	
	1966	1965
Peake	96	122
Penola	433	859
Peterborough	256	455
Pinnaroo	183	160
Port Augusta	1,131	1,471
Port Broughton	106	104
Port Elliot	69	58
Port Germein	85	180
Port Lincoln	1,101	813
Port McDonnell	—	101
Port Pirie	1,315	1,589
Port Wakefield	76	86
Quorn	76	117
Redhill	66	108
Renmark	660	906
Riverton	106	161
Robe	36	72
Robertstown	108	70
Saddleworth	88	163
Salisbury (including Elizabeth)	6,008	7,128
Sedan	126	59
Snowtown	43	68
Spalding—Done by Clare Town	—	—
Stirling	205	338
Strathalbyn District—Done by Strathalbyn Town	—	—
Strathalbyn Town	37	69
Streaky Bay	164	292
Tantanoola—Done by Millicent	—	—
Tanunda	209	236
Tatiara	659	891
Tea Tree Gully	1,350	1,103
Truro	—	91
Tumby Bay	197	229
Upper Wakefield	57	83
Victor Harbour	151	327
Waikerie	205	257
Wallaroo	108	152
Warooka	31	68
Whyalla	1,310	1,236
Willunga	90	120
Wilmington	45	43
Yankalilla	155	257
Yorke Peninsula	437	794
Yorketown	234	259
Totals	57,852	75,139

APPENDIX 21—YEARLY RECORD OF POPULATION, TUBERCULOSIS NOTIFICATIONS, MORBIDITY AND MORTALITY RATES

Year	Population	Notifications			Morbidity Rate			Total Deaths
	1,000's	Pulmonary	Non-Pulmonary	Total	Pulmonary	Non-Pulmonary	Total	
1960	945	255	33	288	26.9	3.5	30.4	39
1961	969	177	37	214	18.3	3.8	22.1	49
1962	989	210	32	242	21.2	3.2	24.4	36
1963	1,000	205	31	236	20.5	3.1	23.6	27
1964	1,045	147	30	177	14.1	2.8	16.9	13
1965	1,060	127	29	156	12.0	2.7	14.7	7
1966	1,080	106	25	131	9.8	2.3	12.1	13

APPENDIX 22—NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1966

NEW ACTIVE AND PROBABLY ACTIVE CASES SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	MALES						FEMALES						PERSONS							
	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Primary	Pleurisy with Effusion	Pulmonary			Non-Pulmonary	Total Persons	Per Cent of each Age Group
			Min.	Mod. Adv.	Adv.				Min.	Mod. Adv.	Adv.				Min.	Mod. Adv.	Adv.			
0- 4	4	—	—	—	—	1	4	—	—	—	—	—	8	—	—	—	—	1	9	6.9
5- 9	2	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	2	1.5
10-14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15-19	—	2	—	—	—	1	—	—	1	1	—	—	—	2	1	1	—	1	5	3.8
20-24	—	—	3	3	—	1	—	—	1	1	—	—	—	—	4	4	—	1	9	6.9
25-29	—	—	—	1	—	2	—	—	—	2	1	1	—	—	—	3	1	3	7	5.3
30-34	—	—	2	2	1	—	—	—	—	1	—	—	—	—	2	3	1	—	6	4.6
35-39	—	—	—	4	—	3	—	—	1	1	—	2	—	—	1	5	—	5	11	8.4
40-44	—	—	1	4	1	4	—	—	3	1	—	4	—	—	4	5	1	8	18	13.7
45-49	—	—	1	3	1	2	—	—	1	3	—	1	—	—	2	6	1	3	12	9.2
50-54	—	—	3	3	—	—	—	—	1	2	—	—	—	—	4	5	—	—	9	6.9
55-59	—	—	3	6	—	—	—	—	—	—	—	—	—	—	3	6	—	—	9	6.9
60-64	—	—	6	2	—	—	—	—	1	1	—	—	—	—	7	3	—	—	10	7.6
65-69	—	—	—	3(1)	—	—	—	—	—	1	—	—	—	—	—	4	—	—	4	3.1
70-74	—	—	3	2	1	1	—	—	1	2	—	—	—	—	4	4	1	1	10	7.6
75 and over	—	—	3	2	—	2	—	—	—	3	—	—	—	—	3	5	—	2	10	7.6
N/S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	6	2	25	35	4	17	4	—	10	19	1	8	10	2	35	54	5	25	131	100.0

APPENDIX 23—RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1966

SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Total Persons
0- 4	—	—	—	—	—	—	—	—	—	—	—	—	—
5- 9	—	—	—	—	—	—	—	—	—	—	—	—	—
10-14	—	—	—	—	—	—	—	—	—	—	—	—	—
15-19	—	—	—	—	—	—	—	—	—	—	—	—	—
20-24	—	—	—	—	—	—	—	—	—	—	—	—	—
25-29	—	—	—	—	—	—	—	—	—	—	—	—	—
30-34	—	1	—	—	—	—	—	—	—	1	—	—	1
35-39	—	2	—	—	—	1	—	—	—	3	—	—	3
40-44	—	—	—	—	—	—	—	—	—	—	—	—	—
45-49	—	—	—	1	—	—	—	—	—	—	—	1	1
50-54	2	—	—	—	1	—	—	—	3	—	—	—	3
55-59	—	1	—	—	—	—	—	—	—	1	—	—	1
60-64	—	2	—	—	—	—	—	—	—	2	—	—	2
65-69	—	—	—	—	—	—	—	—	—	—	—	—	—
70-74	—	—	—	—	—	—	—	—	—	—	—	—	—
75 and over	—	1	—	—	—	2	—	—	—	3	—	—	3
N/S	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2	7	—	1	1	3	—	—	3	10	—	1	14

APPENDIX 24—SOURCE OF NOTIFICATIONS FOR YEAR ENDED 31ST DECEMBER, 1966

Source	Pulmonary Cases		Non-pulmonary Cases		Total Cases
	No.	Per Cent	No.	Per Cent	
Mass Community Surveys	19	18.0	—	—	19
Private Medical Practitioners—					
(*a*) Direct	12	11.3	10	40.0	22
(*b*) *Via* Chest Clinic and City Static Unit	22	20.8	—	—	22
General Hospitals	17	16.0	15	60.0	32
Chest Clinics	14	13.2	—	—	14
Repatriation Clinics and Hospitals	3	2.8	—	—	3
Death Certificates	1	1.0	—	—	1
Special Groups:—*Via* City Static Unit—					
(*a*) Migrant Compulsory Survey	2	1.9	—	—	2
(*b*) Volunteers	3	2.9	—	—	3
(*c*) Contacts	4	3.7	—	—	4
(*d*) Inactive previous mass surveys—re-X-rayed	8	7.4	—	—	8
(*e*) Ship's Crew	1	1.0	—	—	1
Total Notifications (Transfers-in not included)	106	100.0	25	100.0	131

APPENDIX 25—NOTIFICATIONS—LOCAL BOARD OF HEALTH ORIGIN FOR THE YEAR ENDED 31ST DECEMBER, 1966

PULMONARY TUBERCULOSIS

METROPOLITAN		COUNTRY	
Adelaide	3	Barmera	1
Brighton	1	Cockburn (out District)	1
Colonel Light Gardens	1	Coober Pedy (out District)	1
East Torrens County Board	16	Crystal Brook	1
Elizabeth	1	Gawler	1
Enfield	6	Gawler District	1
Henley and Grange	1	Mannum	1
Hindmarsh	4	Mount Gambier District	1
Marion	5	Naracoorte Town	1
Meadows	1	Penola	2
Mitcham	9	Port Augusta	4
Port Adelaide	6	Port Lincoln	1
Prospect	3	Port McDonnell	1
Salisbury	10	Port Pirie	1
Stirling	1	Tatiara	1
Thebarton	1	Whyalla	3
Unley	4	Wilmington	1
West Torrens	4		
Woodville	10		
	85		23

NON-PULMONARY TUBERCULOSIS

Brighton	1	Murat Bay	1
Enfield	1	Musgrave Park (out District)	1
East Torrens County Board	3	Naracoorte	1
Marion	1	Noarlunga	1
Mitcham	3	Port Pirie	2
Salisbury	4	Tatiara	1
Unley	1	Upper Wakefield	1
Woodville	1		
	15		8

APPENDIX 26—NOTIFICATION OF MIGRANTS IN SOUTH AUSTRALIA FOR YEAR ENDED 31ST DECEMBER, 1966

Arrival in Australia	British				Non-British			
	Assisted	Non-Assisted	Total	Per Cent of Total Notified Migrants	Assisted	Non-Assisted	Total	Per Cent of Total Notified Migrants
				Per Cent				Per Cent
Within 1 year ..	2	—	2	6.6	—	—	—	—
Within 1-5 years.	4	—	4	13.4	1	2	3	10.0
Within 5-10 years	1	—	1	3.3	3	2	5	16.7
10 years and over	6	—	6	20.0	9	—	9	30.0
	13	—	13	43.3	13	4	17	56.7

COUNTRY OF ORIGIN

	Assisted	Non-Assisted
England	7	—
Estonia	1	—
Greece	—	1
Ireland	1	—
Italy	4	2
Latvia	1	—
Lithuania	1	—
Malta	—	1
Poland	3	—
Russia	1	—
Scotland	5	—
Yugoslavia	2	—
	26 (86.7%)	4 (13.3%)

APPENDIX 27—DEATHS FROM TUBERCULOSIS (ALL FORMS) FOR YEAR ENDING 31ST DECEMBER, 1966

Age at Death	Male	Female	Total
35-39 years	2	—	2
40-44 years	2	—	2
45-49 years	1	—	1
50-54 years	2	—	2
55-59 years	3	—	3
60-64 years	—	—	—
65-69 years	2	—	2
70-74 years	1	—	1
	13	—	13

APPENDIX 28—PERSONS RECEIVING TUBERCULOSIS ALLOWANCE FOR YEAR ENDING 31ST DECEMBER, 1966

LOCATION OF PATIENTS

Receiving Treatment in Institution			Receiving Treatment Outside Institution			Total Persons Receiving Treatment		
Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
33	6	39	32	7	39	65	13	78

PERIOD IN RECEIPT OF ALLOWANCE

Period	Males	Females	Persons
Under 1 year	42	10	52
1-2 years	7	1	8
2-3 years	2	1	3
3-4 years	2	1	3
4-5 years	1	—	1
Over 5 years	11	—	11
Totals	65	13	78

APPENDIX 29—MASS X-RAY SURVEYS FOR YEAR ENDED 31ST DECEMBER, 1966

Age	Number X-Rayed	Active Cases		Suspect Active at 31st December		Inactive Cases		Other Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	Number	Rate per 1,000	
				METROPOLITAN AREAS				
10-14	30	—	—	—	—	—	—	—
15-19	4,368	—	—	—	—	7	1.6	9
20-24	4,362	1	0.23	—	—	20	4.6	4
25-29	4,852	—	—	1	0.2	18	3.7	3
30-34	4,201	1	0.24	—	—	36	8.6	11
35-39	4,609	—	—	3	0.7	39	8.5	11
40-44	4,206	—	—	2	0.5	38	7.2	3
45-49	3,667	1	0.27	1	0.3	38	10.4	7
50-54	3,333	1	0.30	3	1.0	53	15.9	17
55-59	2,816	—	—	1	0.4	41	14.6	21
60-64	2,171	—	—	2	0.9	42	19.3	26
65-69	1,883	1	0.53	2	1.0	36	19.1	22
70-74	1,520	—	—	1	0.7	28	18.4	23
75 and over	2,050	1	0.49	—	—	44	21.5	23
Totals....	44,068	6	0.14	16	0.4	440	9.98	180
				COUNTRY AREAS				
10-14	185	—	—	—	—	—	—	—
15-19	3,236	—	—	—	—	3	0.9	5
20-24	4,343	—	—	—	—	12	2.8	7
25-29	4,247	—	—	—	—	24	5.6	5
30-34	3,914	—	—	1	0.3	28	7.2	13
35-39	4,340	—	—	—	—	39	9.0	15
40-44	4,180	1	0.24	—	—	33	7.9	9
45-49	3,474	1	0.29	2	0.7	45	12.9	12
50-54	3,212	1	0.31	1	0.3	43	13.4	25
55-59	2,371	—	—	3	1.3	32	13.5	28
60-64	1,731	1	0.58	2	1.1	40	23.1	17
65-69	1,177	—	—	—	—	34	28.9	21
70-74	857	—	—	—	—	15	17.5	19
75 and over	1,010	—	—	1	1.0	33	32.7	19
Totals....	38,277	4	0.105	10	0.3	411	10.7	195
				CITY STATIC UNIT				
0-14	178	1	0.85	—	—	13	11.0	43
15-19	7,805	—	—	—	—	34	4.4	33
20-24	5,057	3	0.59	—	—	38	7.5	25
25-29	3,510	3	0.85	—	—	67	19.1	9
30-34	3,464	1	0.29	2	0.6	100	28.9	24
35-39	3,639	2	0.55	1	0.3	160	44.0	36
40-44	2,983	3	1.01	1	0.4	195	65.4	24
45-49	2,185	2	0.92	3	1.4	223	102.1	34
50-54	1,785	2	1.12	4	2.2	241	135.0	58
55-59	1,442	2	1.39	1	0.7	246	170.6	51
60-64	1,320	—	—	1	0.8	220	166.6	53
65-69	1,109	2	1.80	2	1.7	226	203.8	35
70-74	554	2	3.61	—	—	133	240.1	31
75 and over	587	1	1.70	—	—	111	189.1	45
Totals....	36,618	24	0.66	15	0.4	2,007	54.8	501

APPENDIX 30—EPIDEMIOLOGICAL TUBERCULIN TESTS FOR YEAR ENDED 31ST DECEMBER, 1966

TYPE OF SURVEY—SCHOOL CHILDREN, NURSES, POLICE RECRUITS, ETC. (EXCLUDING CONTACTS)

Age	Number Tested	Type of Test		Positive				Negative	
		Mantoux 10 Tu of OT	Heaf OT	Not Previously Vaccinated with B.C.G.		Previously Vaccinated with B.C.G.		No.	Per Cent
				No.	Per Cent	No.	Per Cent		
0- 4	237	237	—	4	1.8	20	9.2	213	98.2
5- 9	13,367	13,367	—	94	0.7	210	1.6	13,043	99.3
10-14	12,480	12,480	—	284	2.3	375	3.0	11,821	97.7
15-19	1,521	1,521	—	73	10.6	833	54.7	615	89.4
20-24	427	427	—	61	27.0	200	46.8	166	73.0
25-29	191	191	—	59	43.7	56	29.4	76	56.3
30-34	166	166	—	54	43.9	43	26.0	69	56.1
35-39	117	117	—	54	54.5	18	15.4	45	45.0
40-44	118	118	—	62	59.0	13	11.0	43	41.0
45-49	97	97	—	55	62.5	9	9.3	33	37.5
50 and over	316	316	—	195	64.0	11	3.5	110	36.0
Totals	29,037	29,037	—	995	—	1,788	—	26,234	—

APPENDIX 31—ATTENDANCES FOR THE YEAR ENDED 31ST DECEMBER, 1966

	Chest Clinic	Contact Clinic
Adult	8,250	6,390
Child	794	4,271
Totals	9,044	10,661
First visit ever	809	3,584
Previously attended, first visit in current year	4,198	638
Subsequent visit current year	4,037	6,439
Totals	9,044	10,661
State X-ray Health Survey referral	445	—
Referred by private doctor	315	—
Contact of known case	30	1,329
Routine examination—Special groups	19	2,255
Totals	809	3,584